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THIRTEENTH ANNUAL REPORT  
OF THE  
**Commissioner of Agriculture**  
**Commerce and Industries**

OF THE  
State of South Carolina



1916

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COLUMBIA, S. C.  
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1917.



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**OF THE**

**Commissioner of Agriculture  
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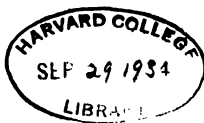
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*Department of Agriculture*

## LETTER OF TRANSMITTAL.

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*To His Excellency, the Hon. Richard I. Manning, Governor of South Carolina.*

Sir: In accordance with the provisions of Section 854 of the Civil Code, I have the honor herewith to hand you my thirteenth annual report, covering the work of the Department under the several laws with the enforcement of which the Department is charged, exclusive of the work of the Labor Division, for which a separate report is required by law and has been filed, for the year 1916, for transmission to the General Assembly, in accordance with the provisions of the section of the Code aforesaid.

Respectfully,

E. J. WATSON,  
Commissioner.

## ANNUAL REPORT.

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### GENERAL.

The twenty-eight months ending with December 31st, 1916, being the period since the World War began, have carried the people of South Carolina through more unexpected, startling, sudden, remarkable and even paradoxical economic changes than they have experienced heretofore in the entire period since the Civil War. It is almost unbelievable, looking back to December, 1914, that in exactly two years the State should reach the maximum ever attained in productive industry, in manufacturing as well as in agriculture, and that the year 1916 should see the value of combined agricultural and manufactured products crawl up to the enormous sum of \$361,085,788.00, an increase for the year in the first instance of \$43,841,000.00, and in the second instance of \$43,194,483.00, a combined net increase of \$87,135,483.00. The manufacturing industries have produced this year \$168,617,788.00, and products of the fields have brought in \$192,468,000.00.

In the period of twenty-eight months we have experienced with cotton alone the terrifying sensation of "no price" and the more delightful sensation of "20 cents cotton." We have seen our chief product go down to zero and rise to the highest price since 1872.

At this time in 1914 economic pandemonium was reigning and hysteria was rampant among the people. Then came the true test. Our bankers, our business men and our people faced the future resolved to win back economic independence. The long-preached doctrine of diversification of crops, heretofore received with a deaf ear, was accepted; the doctrine of living at home was also taken to the farms, and the people set about to plant grain and do other things they ought to have been doing for years. The story of the recovery that came by the end of the year 1915 is told in my last annual report. Into the year 1916 the people plunged with a hopeful heart. The restoration of the price of cotton to 11 cents a pound in 1915 made some forget what they had learned of the doctrines referred to above, but in the main the new scheme was followed.

Bad seasons for cotton came along and helped wonderfully, and when the harvest time came the inconceivable phenomenon of 20 cents cotton in the face of closed world markets had happened. Those who 24 months before were proclaiming vehement demands for warehouses and for the Regional Reserve Banks to be hastened in their organization forgot all about warehouses and such things, and the fleecy staple rolled to the market as fast as it could be ginned.

The siren song of prosperity at the end of the year was abroad in the land and swelling to a grand chorus as Christmastide dawned.

Midst the general rejoicing there appeared at the end of the year but one cloud in the sky. Last year the experts had announced that it would probably be four years before the boll weevil would do damage in South Carolina. But the boll weevil was as industrious during the year as anybody else, and by December 1, moving in solid phalanx, the boll weevil had moved his forces squarely up to the Savannah River, with his north-western line resting against Augusta. In July next he will begin his migration into South Carolina, and, if he pushes his line as far in 1917 as he did in 1916, he will have covered most of this State before frost falls again, and at the opening of the 1918 cotton season begin to ravage the South Carolina crop.

This means a rapid season of preparedness this year to meet the new economic enemy, and the people will taste a new experience. Only this time it is something that will stay. But the training of 1915 will prove invaluable to the producers and there will doubtless be a return in part this year to the diversified lines of agriculture that had to be practiced in 1915. This time the lessons will be permanent and there will be no chance for abandonment. And so, after all, this State is to meet the weevil a little better prepared because of experiences in the past twenty-eight months than any of the other States upon the arrival of the enemy. The details of the only method for combating the pest have been presented to the people of the State steadily and relentlessly for the past ten years. They know now what to do, and they will doubtless do it. After all, the whole effort at preparedness depends absolutely upon each individual citizen, and I see no reason for undue excitement or unnecessary expense. Now that he knows he has to do it, I believe the individual is going to do his duty to himself and to his State.

The one very important new weapon placed in the hands of the individual grower this year to aid him in the fight before him, to enable him to get out of short term, pressing debt and to secure live stock and farm machinery for the new crops he must raise has been the inauguration of the new National Rural Credits system. It will shortly be in full operation, and Columbia, I am happy to say, is the location of the Farm Loan Bank for this District. With this system in full operation and our people already understanding what must be done, there should be no occasion for undue excitement.

Though the State will have one more year in which to grow cotton, the producers should not be misled by the taste of 20 cents cotton. We are at this moment facing the most inscrutable future that business men have ever had to face, and there should be a resort to conservation. No living man would dare venture a prediction on the price of cotton two months ahead. The man who stakes all on cotton under such conditions as now prevail and in the face of the boll weevil is simply gambling, and gambling rarely wins.

For several years, foreseeing that effective weapons should be in the farmer's hands and he should know how to use them, this Department has slowly but surely been providing an effective channel through which the producer could dispose of, with the maximum profit to himself, the new products of the soil he must raise under boll weevil conditions. I am happy to say that I believe, in the few years we have been at this undertaking, we have succeeded in developing the most successful and far-reaching system of marketing that has yet been devised in any of the States—a system already adopted in completeness by several of other progressive States. The system is so constructed and organized that it can at any time, at a minimum of expense, be expanded to handle any volume of business, and care for the new conditions as they arise.

Also with the idea of arming the producer thoroughly to meet the exacting new conditions and restoring and maintaining the fertility of the soil, the Department has done its utmost to put marl within the reach of the farmer at a minimum of cost. This effort has been made for the reason that in no other way in our lime-deficient soils can a basis for permanent fertility be laid, and bacterial life be restored. In no other way can the leguminous forage crops be economically raised, and without these the



live-stock industry that is imperative cannot be builded and maintained.

Still another weapon will be placed in the producer's hands this year, when a forward step will be taken to reduce the cost of transportation of products of the farm from the farm to the nearest railway station. Over the public highways of the past and of the present transportation has brought an enormous annual waste reducing profits. The new Federal Aid Act, in the agitation for the passage of which this Department has aided for some years, has at last come, and the State of South Carolina will as a matter of course qualify to receive her share of the annual aid extended for highways by the Federal Government.

Still another weapon may be possible of attainment in the coming year. Through the liberal use of marl and limestone, and the growing of leguminous crops in a more extensive manner vast amounts of the free nitrogen of the air can be fixed by bacteria in the nodules, and other large accretions of nitrogen from the air through the agency of other varieties of bacteria that live in the sweet soils rich in organic matter, most of which eventually is changed by still other soil organisms into nitric acid, and which combines with the lime carbonate of the marl or limestone forming that great dual plant food, lime nitrate. This is why the Department is doing all that it consistently may to foster the efforts of the Columbia Chamber of Commerce to secure the location of one of the recently authorized Federal Government Nitrogen Fixation plants in this State, so that through our great waste water power we may be the beneficiaries of the peace-time product of these plants, lime nitrate.

It will be a great day for South Carolina, with the greatest water-shed on the Atlantic south of Niagara Falls, if one of the units of this far-reaching undertaking should be located here, where vast power is going to waste, and great deposits of purest lime carbonate are entirely undeveloped.

The economic loss to the State through the continual purchase, rapidly increasing, of the Chilean nitrate would be largely stopped, and much of this money remain at home. If, as has been stated by students of this subject, 200,000 horse-power could be concentrated at Columbia, which could fix enough atmospheric nitrogen to form over 400,000 tons of lime nitrate, all of which could be profitably used in South Carolina agriculture alone, and

the lime nitrate could be manufactured at and sold to farmers for \$18.00 per ton, as against a present price of around \$65.00 per ton for the Chilean nitrate, our farmers could buy for \$7,200,000.00 more value from an agricultural view than Southern farmers are paying now for \$26,000,000.00 of nitrate of soda.

But beyond all this, the development of a plant in this State for the manufacture of soluble nitrates from the air would be a guarantee that our crop yields would not decline during a period of war from lack of soluble nitrates when nitrates would be contraband, and the United States not the "Mistress of the Seas." It is earnestly to be hoped that in this age where "efficiency" is stressed in every undertaking, and farmers urged "to live at home and board at the same place," that the enormous saving that would result to agriculture in peace times, and the guarantee of permanence of our yields under war conditions be not overlooked. Without fertile soils, our civilization would decline. The greatest asset of South Carolina is this same fertility of the land, and it is the manifest duty of government to see that it is not only maintained, but increased.

Again the Federal Government has undertaken a series of agricultural economic surveys designed to ascertain the actual cost of production of crops and of live stock, with the purpose of giving the farmer definite, business-like information that has heretofore been denied him. This work is destined to save many a man from making a failure at farming and having to start all over again.

So much for the general results of the year 1916 and as to the preparedness for the future at the opening of the year 1917.

It is well to look briefly at those chief things that have commanded the attention of the Department during the year which has just closed.

#### **PREACHING THE DOCTRINE.**

At the very beginning of the year it was realized that the boll weevil was moving far faster toward the borders of this State than had been generally believed, and that by frost he would probably be at the banks of the Savannah, and as the year opened the Commissioner began to campaign the entire State reaffirming the doctrine of diversification, and outlining the only methods of preparedness known in the experience of sister States, and begging the people to start in the right direction in time. This he

kept up, driving home also the steps necessary to maintain the fertility of the soil, until November came, and his voice failed and drove him indoors. Chautauquas, and public gatherings of all kinds were attended, and here and there the seeds sown have already borne fruit.

#### **OPENING OF THE MARL BEDS.**

Knowing full well that everything economically in the future of agriculture in South Carolina depended absolutely in the restoration of fertility in the soil and maintaining that fertility; that it could never be done by the ever-increasing costly artificial methods of fertilization employed in the past 25 years; that the very necessary live stock industry could only be built on soil building crops and that those crops could not be grown in lime deficient soils, the Department just as soon as the legislative enabling Act had been approved set out to arrange to furnish to the farmers of this State as quickly as it could be done a fine quality of carbonate of lime, the soil's greatest need, at a minimum of cost. Already the preliminary arrangements had been made when the Act was approved. The contract was quickly made, and very soon there was introduced to the South Carolina farmer the new natural product, known as phospho-marl. Mr. Morgan, President of the Charleston (S. C.) Mining and Manufacturing Company, had already undertaken to open the inexhaustible deposits of marl on the Ashley River, and a fine plant equipped with costly machinery for driving off moisture and pulverizing the raw material was in course of erection. Both the Department and the company had been searching only for marl; a natural product containing a fine percentage of phosphate of lime was found, a product furnishing when used properly phosphoric acid as well as lime carbonate, and the latter all immediately available. Its mechanical preparation was such as to dry it without calcining, and give it to the consumer in ideal form. The details as to the quality of the product, the sales and the general progress made are given in the chapter dealing with the subject. The farmers of the State have not yet fully realized the value of the material put within their reach, perhaps for the reason that the Department has received no aid from sources that should have aided, and for the further reason that certain unprincipled agents of a ground limestone annex to a big fertilizer concern deliberately used the mails to circulate misleading, false

and doctored literature in the effort to break down the undertaking of the State to pull her people out of the mire of extravagant and wasteful methods of fertilization. The State Railroad Commission and the railroads themselves assisted in the promulgation of a special tariff on marl, and the material is now being put out at \$1.50 per ton at the mine, plus the low prices of freight. This means that allowing for the phosphorus value of 97 cents to \$1.10 per ton, lime carbonate averaging more than 68 per cent. pure is being furnished at from 40 cents to 53 cents per ton, measured by the unit.

While the results of getting this deposit of marl open, and making available this valuable material are not yet fully apparent, the Department considers its success with the undertaking, conducted under the Act, the most noteworthy achievement in its history, and is perfectly confident that the entering wedge for the redemption of the soil in this State has been placed.

A most comprehensive bulletin or treatise on the use of agricultural lime and its value in agriculture is now in the press and will shortly be issued.

#### **THE NEW LABOR LAWS.**

During the first months of the year the proper division of the Department was kept exceedingly busy putting into effect the new labor laws enacted by the General Assembly, chief among these being the new Sixty-Hour Law, which has proven as effective as it was expected to do. The separate report on this work, however, gives a comprehensive understanding of what had to be accomplished in this regard. Labor conditions in the State have been greatly stabilized within the year.

#### **INOCULATION WORK.**

The Department, acting under the Enabling Act, continued to furnish to the people of the State inoculation for all legumes at 40 cents an acre delivered anywhere in the State, and in spite of the senseless opposition to this work manifested in certain circles in 1915, farmers of the State who had already felt the benefits from the use of pure cultures this work is steadily gaining headway. During the year samples of these cultures, drawn from the current stock, were furnished to the U. S. Government for examination and near the end of the year the report was made by the Government certifying that all the cultures were of full 100% virility, and could not be better.

#### **MARKETING WELL IN HAND.**

During the year the work of the Bureau of Marketing was developed rapidly and by the end of the year its business had quadrupled. This has proven the most popular and effective of all of the Department's undertakings and daily letters reach the Department from citizens of the State testifying to the benefits received.

When the time comes for a quick expansion of this work, as it will with the introduction of new and diversified crops, it will be but a short step that will have to be taken to make the Bureau meet the situation.

#### **REAL GASOLINE IN SOUTH CAROLINA.**

I believe I can point with pardonable pride to the results of the enforcement by the Department of the Oil and Gasoline Act. As a matter of fact South Carolina is the only State in the Union today that is seeing that her citizens actually receive gasoline when material by that name is bought. During the year there was an acute situation once as to supplies for the independents, but that ended satisfactorily, and again in this State as all over the country there was considerable of a stir about the rapid rise of prices. The year ended, however, with everything in the petroleum products world in this State working smoothly. There have been less difficulties encountered this year than ever before and the inspection work has been vigorous and rigid, so much so that it is impossible to slip low grade material into the State. The 8% residue standard has so far been steadily maintained and most of the material examined has been far better even than this requirement.

#### **THE FEED SITUATION.**

During the year the Department has given perhaps the most vigorous inspection service yet attempted of all mixed feeds and commodities coming under the Commercial Feed Stuffs law. This State is now perhaps as free as any in the Union of inferior, low grade products, and cut-throat competition which formerly ran good, honest feeds out of the market is now a thing unknown. The effectiveness of this protective State law has been materially increased by the free exercise of the Federal authority conferred on the commissioner, the inspectors and the chemists of the Department, and in quite a number of cases where it was deemed

necessary to put an effective stop to certain practices prosecutions and convictions in the United States Courts have been instituted and obtained. In this co-operative work the United States District Attorneys have co-operated readily and efficiently. Fake feed oats, carrying large percentages of weed seeds and trash, have in this way been practically eliminated from the markets of the State.

#### **ADULTERATED OATS RUN OUT.**

Under the Seed Inspection Act this year the Department for the first time in this country, in any State, has waged a merciless war on the practice of shipping in so-called seed oats which were in reality oats of low or no germinating power, loaded with Johnson grass and noxious weed seeds. Many a shipment of such worthless stuff was tied up and the shippers were forced to remove the goods from the State. In the past the losses from failure of crops and from the infestation of fields with Johnson grass and weeds have been enormous.

#### **SO-CALLED TONICS.**

Manufacturers of Condimental tonics and feeds, material the sale of which as a matter of fact should be prohibited altogether as ninety per cent. of it perhaps is practically worthless, have as a rule complied with the law, but in several instances several who point blank refused to comply with the law, sent their salesmen about the State, and sold to many of the unsuspecting. Of course all these shipments had to be tied up by the Department, and merchants who buy this kind of stuff are now taking the trouble to ascertain whether the manufacturer has complied with the law or not before buying.

#### **PUBLIC HIGHWAYS AND MAPS.**

Early in the year the demand for information as to the public highways of the State became so widespread and so insistent that the Department set about assembling its road surveys made from time to time, made surveys of additional roads, and early in the summer issued a public highway map of the State, showing main arterial highways, connecting and other highways, giving distances and carrying a color scheme of road-making for use with similar markings on the arterial lines. This map compared more than favorably, according to expert critics, with any highway map issued anywhere in the nation. The demand was so

great for it that before September the entire edition of 3,500 copies had been exhausted. A new edition is now about to be issued.

The Department simultaneously entered upon the slow and tedious work of sign-posting the main highways with colors to correspond with the maps, using color boards and bands around telegraph and telephone poles. Most of the highways had been partially completed when the great floods came tearing the highways for the time to pieces and work had to be suspended. In the Piedmont and Pee Dee work is yet to be done, though the material is prepared and ready.

The Department during the flood period was kept busy for weeks furnishing the traveling public with information as to the rehabilitation of cut highways, and rendered many a real service.

The year witnessed the completion of the new Appalachian highway from the mountains to Columbia, an undertaking which the Department launched and assisted in getting under way the preceeding year.

In the fall the Department organized the preliminary campaign for the rehabilitation and rebuilding of the Old State road from Columbia to Charleston, which resulted finally in the raising of about \$10,000 and contributions of teams and labor, the actual work getting under way shortly afterwards under the direction of a central committee formed at a meeting held in Charleston.

#### **FARM LOAN ASSOCIATIONS ORGANIZED.**

The foregoing is merely a brief resumé of some of the many and varied activities of the Department of Agriculture, Commerce and Industries. It takes no consequence of the thousands of inquiries of every conceivable subject that pour into the Department's offices, nor of the hard and earnest campaign made by the Commissioner through the State organizing Farm Loan Associations under the new National Act, with the view of having the number of associations already formed and ready for business bear its weight in securing the location of the Farm Loan Bank in this District for Columbia and the State of South Carolina.

### NOSTRUMS AND TONICS.

Under the Pure Food and Drug Laws, which are conspicuously weak for some reason, the Department has had uphill work. Our laboratories have co-operated with the Federal work under the Harrison Anti-Narcotic Act, and furnished analyses. The Department has co-operated with the sheriffs, magistrates and constables and municipal authorities in making analyses of ciders, near-beers, and other concoctions submitted by them, either through the Governor's office or direct.

The Department has made every possible effort, under both State and Federal Pure Food and Drug Laws, to get at the various worthless nostrums and alcoholic tonics with which the State is continually flooded. These alcoholic mixtures, which usually consist of about seventeen to nineteen per cent. alcohol (more than three times as much as lager beer), with a trace of gentian, (a bitter drug and so-called tonic) and cascara (a laxative), are labeled so as to comply with the Pure Food and Drug Laws, and under those laws cannot be touched. In effect they are nothing but palatable alcoholic beverages, the seventeen to nineteen per cent. of alcohol giving all the "kick" desired, and giving all the enthusiasm to make the user write glowing "testimonials." To prohibit the sale of five per cent. ciders, etc., and make their sale punishable, while leaving a wide-open door to those concoctions, seems childish, for these mixtures play not alone with the desires, but with the ignorance, and worse than all, with the ailments of the people. They spend a dollar for a bottle of the stuff worth at best not more than twenty-four cents, in the hope of "curing" disease, and become toppers, accelerating the disease nine times out of ten with each dose. In the City of Columbia alone, I am told, one of these alcoholic mixtures comes at the rate of nine carloads a month. Thousands of dollars of the people's money are spent daily for this class of stuff. The worst feature of it all is that money rolls in upon the manufacturers at such a rate that elaborate and expensive advertising campaigns are conducted, and the press is filled with the glowing advertisements and "testimonials," the latter written no doubt under the influence of the "kick" of the alcohol. Even the regilious press permits itself to be used by these fake liquor venders.

As this is written there has been called to my attention the case of a man in Columbia, an ex-alcoholic, who read the advertisement of one of these concoctions; he has consumed over \$60.00



worth of the stuff, and his children scarcely have enough to be comfortable. Worse than this, even, is the large number of life-long prohibitionists, men and women, who because of their suffering, have begun to take these things and are being slowly converted into confirmed alcoholics. Even the tender-aged child is not spared.

Not only should these concoctions be driven out of the State by a law with teeth in it, but it should be made a penitentiary offense without alternative fine to engage in the traffic. The enormous extent to which the thing has spread and the irreparable damage being done to ignorant people already suffering from bodily ailments and seeking relief, are such that the sale of this stuff is in reality in the class with the unrestricted use of narcotics.

With all the earnestness at my command I call this situation to the attention of the General Assembly, and plead for the enactment of such laws as will effectively cure it.

Those who rave over prohibition and are blind to this wide-open distribution of "cocktails" to an unsuspecting and suffering people may well be likened to the ostrich.

#### **MCCORMICK COUNTY.**

During the year McCormick County, having run the gamut of the Courts successfully, was duly created, elected her officials and took her place on the map of South Carolina. This Department has already aided the infant county in a substantial effort to secure good roads.

An effort is now in progress to form a new county with Williamston, at present in Anderson, as the county seat.

#### **FAIRS.**

This year the most successful State fair in many years was held, and was largely attended.

The year was characterized also by more county, district and particularly community fairs, than ever before, and all of them were worthy efforts of great educational and social value.

At many of these fairs the State Department's educational exhibit was displayed.

#### **OFFICE FORCE.**

The office force has been maintained practically without change throughout the year. Mr. J. W. Rhea, Assistant Chemist, resigned in the spring, and Mr. H. H. Beard, of Richland, was

appointed to succeed him. When the call to arms came, owing to the situation in Mexico, Dr. A. C. Doyle, Assistant Chemist, being in the National Guard service, was given indefinite leave of absence, and he is still in service with the Second South Carolina Regiment on the Mexican border. Mr. C. E. Pettit, of Cherokee County, was appointed to fill the vacancy created by the absence of Dr. Doyle. Only one inspector was added to the force during the year, Mr. D. L. Smith, of Colleton County.

#### **FINANCIAL.**

At the end of last year the Department was exactly self-sustaining. This year under the new arrangement made in the general appropriation bill the Department has more than fulfilled the assurance I gave the Ways and Means and Financial Committees and came to the end of the year with a surplus of \$15,624.13, \$10,000 of which was paid into the general account of the State, and \$5,624.13 of which has been carried forward into 1917 to insure the uninterrupted operation of the Department. Deducting the \$4,000.00 of direct appropriations made for the Department, repaid in the \$10,000.00 referred to above, the net surplus at the end of the year was \$11,624.13.

This means that this Department has maintained its own operation, carried the expenses of factory inspection and the enforcement of the labor laws, and has contributed the above surplus to the income of the State.

Because of the increased responsibilities under the new arrangement it was necessary for safety of operation to carry forward a considerably larger amount than last year. Under the new arrangement, which I have recommended be continued, much more work is possible at a greater economy.

If the diversity of work required by the special police power laws with the enforcement of which the Department is charged was not done on the thoroughly organized composite system employed, and each had to be done separately, with separate directing officials and forces of office clerks, separate laboratories and chemists, entirely distinct inspection forces and overhead charges, there would be a great decrease in efficiency of service, and the cost would greatly exceed the income.

The total receipts for the year from the four special funds were \$56,101.31, and the total expenditures were \$44,993.05, the excess of receipts over expenditures being \$11,108.26.

Auditor Bradley has checked the books of the Department up to December 1, 1916, and has found them absolutely correct, according to the duplicate of his report furnished me.

In the 1915 statement of expenditures the refund to the State for that year appears larger by \$8,000.00 than it really was, as the warrant for the refund to be applied to the year 1914 was drawn on January 8, 1915, and consequently appears in the 1915 account.

I have endeavored below, in full explanation of what I have said above, to summarize and analyze the financial affairs of the Department in a comprehensive manner, though appended to this report will be found the classified summaries of receipts and expenditures for each fund and account as well as the itemized statements of every warrant drawn on every account:

#### COMMERCIAL FEED STUFFS FUND.

|  | 1915.       | 1916.       |
|--|-------------|-------------|
| Balance on hand January 1.....                     | \$4,249 00  | \$2,435 88  |
| Receipts for 12 months ending December 31.....     | 26,399 42   | 26,766 46   |
|  | <hr/>       | <hr/>       |
| Expenditures for 12 months ending December 31..... | \$30,649 02 | \$29,139 33 |
|  | 20,400 00   | 22,293 23   |
|  | <hr/>       | <hr/>       |
| Balance on hand, December 31.....                  | \$10,249 02 | \$6,846 05  |
| Paid in General Account of State.....              | 7,813 14    | 4,000 00    |
|  | <hr/>       | <hr/>       |
| Final balance on hand, January 1, 1917.....        | \$2,435 88  | \$2,846 05  |

#### OIL FUND.

|  |             |             |
|--|-------------|-------------|
| Balance on hand, January 1.....                    | \$9,641 62  | \$2,079 99  |
| Receipts for 12 months ending December 31.....     | 19,968 11   | 25,347 36   |
|  | <hr/>       | <hr/>       |
| Expenditures for 12 months ending December 31..... | \$29,609 73 | \$27,427 35 |
|  | 15,529 74   | 19,587 67   |
|  | <hr/>       | <hr/>       |
| Balance on hand December 31.....                   | \$14,079 99 | \$7,889 68  |
| Paid in General Account of State.....              | 12,000 00   | 6,000 00    |
|  | <hr/>       | <hr/>       |
| Final balance on hand, January 1, 1917.....        | \$2,079 99  | \$1,889 68  |

#### CONDIMENTAL FEED TAX FUND.

|  |            |          |
|--|------------|----------|
| Balance on hand, January 1.....                    | \$635 50   | .....    |
| Receipts for 12 months ending December 31.....     | 680 00     | 870 00   |
|  | <hr/>      | <hr/>    |
| Expenditures for 12 months ending December 31..... | \$1,315 50 | \$870 00 |
|  | 128 14     | .....    |
|  | <hr/>      | <hr/>    |
| Balance on hand December 31.....                   | \$1,187 36 | \$870 00 |
| Paid into General Account of State.....            | 1,187 36   | .....    |
|  | <hr/>      | <hr/>    |
| Balance on hand, January 1, 1917.....              | .....      | \$870 00 |

#### SEED INSPECTION LICENSE FUND.

|  |            |            |
|--|------------|------------|
| Balance on hand, January 1.....                    | \$182 50   | .....      |
| Receipts for 12 months ending December 31.....     | 2,166 50   | \$3,180 50 |
|  | <hr/>      | <hr/>      |
| Expenditures for 12 months ending December 31..... | \$2,349 00 | \$3,180 50 |
|  | 1,229 50   | 3,162 10   |
|  | <hr/>      | <hr/>      |
| Balance on hand, December 31.....                  | \$1,119 50 | \$18 40    |
| Paid into General Account of State.....            | 1,119 50   | .....      |
|  | <hr/>      | <hr/>      |
| Balance on hand, January 1, 1917.....              | .....      | \$18 40    |

**TOTAL RECEIPTS ALL REVENUE SOURCES, 1916.**

|                                   |             |                    |
|-----------------------------------|-------------|--------------------|
| Commercial Feed Stuffs Fund.....  | \$26,703 45 |                    |
| Oil Inspection Fund.....          | 25,347 38   |                    |
| Condimental Feed Fund.....        | 870 00      |                    |
| Seed Inspection License Fund..... | 3,180 50    |                    |
|                                   |             | <u>\$56,101 31</u> |

**TOTAL EXPENDITURES FROM ALL FUNDS, 1916.**

|   |             |                    |
|---|-------------|--------------------|
| Commercial Feed Stuffs Fund.....          | \$22,293 28 |                    |
| Oil Inspection Fund.....                  | 19,537 67   |                    |
| Condimental Feed Fund.....                |             |                    |
| Seed Inspection Fund.....                 | 3,162 10    |                    |
|   |             | <u>44,993 05</u>   |
| Excess of receipts over expenditures..... |             | <u>\$11,108 26</u> |

**SUMMARY OF BALANCES ON HAND JANUARY 1, 1917.**

|  |            |                   |
|--|------------|-------------------|
| (After paying into General Account of the State the sum of \$10,000.00.) |            |                   |
| Commercial Feed Stuffs Fund.....   | \$2,846 05 |                   |
| Oil Inspection Fund.....   | 1,889 68   |                   |
| Condimental Feed Fund.....   | 870 00     |                   |
| Seed Inspection Fund.....  | 18 40      |                   |
|  |            | <u>\$5,624 13</u> |

**SUMMARY OF BALANCES ON HAND, JANUARY 1, 1916.**

|                                  |            |                   |
|----------------------------------|------------|-------------------|
| Commercial Feed Stuffs Fund..... | \$2,435 88 |                   |
| Oil Inspection Fund.....         | 2,079 99   |                   |
| Condimental Feed Fund.....       |            |                   |
| Seed Inspection Fund.....        |            |                   |
|                                  |            | <u>\$4,515 87</u> |

**Amount paid into the General Account of the State, Dec. 31,**  
**1916** .....\$10,000.00

**RECEIPTS FROM INOCULATION SALES.**

In addition to the handling of the above State funds proper, the Department, under the new Act relating to the furnishing of inoculation, received the sum of \$2,729.20, which amount was paid over to the Southern representative of the Earp-Thomas Farmogerm Company, the contractors under the Act. A detailed statement of this account is appended to this report with the other financial summaries. This represents 6,823 acres of inoculation furnished the farmers at 40 cents an acre, delivered.

**RECEIPTS FROM SALES OF MARL.**

Acting under the contract with the Charleston (S. C.) Mining & Manufacturing Co., made under the Act of the General Assembly, the Department collected from freight prepaid and other prepaid shipments of an aggregate of 6,321 tons of phospho-marl a total of \$14,446.45, which, less 10 cents a ton for expenses of handling allowed under the contract, was turned over to the contracting company as per statement appended at the end of this report. The amount allowed for expenses of handling amounted to \$663.75, and this, less \$67.15 for printing of blanks, was paid

to Edmund A. Felder, the representative of the inoculation culture contractors, whom I employed for this amount to handle the orders and correspondence.

#### **MOTOR CAR SERVICE.**

The motor car service of the Department inaugurated in 1911 has been continued. The car purchased three years ago is still in service, and at the close of the year was practically rebuilt with new frame and vital parts. By means of the motor, which covers about 18,000 miles a year, sections of the State and localities in the far rural districts which could not be reached otherwise at probably three times the cost are constantly visited in the prosecution of the various lines of work. It has enabled the Commissioner to go personally to four and five and sometimes more points in the State in one day without serious loss of time from the exacting office work, and in reality to render to the people of the State the equivalent of about three years' work in one, attainable by the ordinary means. As the cost of maintenance, operation, repairs and rebuilding at the end of the year has been no more than the salary and traveling expenses of one additional inspector, and as the motor, without extra expense, could move from point to point five men, I have felt more than warranted in expending the \$2,543.18 that the year's maintenance of this service has cost, including housing, supplies, repairs, expenses of travel, and cost of rebuilding car and fitting it for the service of 1917. Indeed the results of the service have been several times greater in value than the services of one man in one line of work that the same amount would have paid for. Through the possession of this means of transportation no call coming from a distant farm or rural community is ever neglected.

#### **RECOMMENDATIONS.**

Though the General Assembly of the State has ever been kind, and given careful consideration to the recommendations for constructive legislation that have been made from time to time by this Department, the Department always hesitates to suggest subjects for legislative enactment. It has been the policy of the Department to refrain from recommendations looking to direct appropriations as far as possible, and to confine its efforts in this direction to the suggestion of legislation greatly needed for the continuance of progress upon agricultural and generally con-

structive lines. Recommendations that have been made in the past and that are made now are made because of the knowledge of conditions existing in the State affecting the welfare of the masses of the people, and have not been and are not confined to purely those matters that would come under the jurisdiction of this Department, but matters that would naturally be executed otherwise.

Approaching the subject of recommendations from the above viewpoint, I would most respectfully recommend to the General Assembly:

That adequate provision for permanent housing of the Department, its laboratories and exhibit and museum property be made at the earliest date possible. The Department is prepared to suggest a plan to accomplish this without any appropriation being made by the State.

That, though this Department has nothing to do with the matter, liberal support be given to the tick eradication work.

That the Act requiring different standard size packages for bolted and unbolted meal be amended so as to require one standard size for both, conforming to the laws of other States.

That legislation looking to the better baling of cotton in this State be enacted.

That the Federal Aid Road Act now being effective and funds available thereunder as soon as this State complies with its terms, it is imperative that the authority contemplated under the Federal Act be designated to some existing Department of the State government or some new Department, and that the long-delaying action for a State-wide license and tax on motor driven vehicles be taken. This Department has for some years labored earnestly in aiding and promoting all highway undertakings in the State, and has mapped and charted all the principal highways, acquiring valuable knowledge of conditions, road material, etc. If it is desired to secure a maximum of results at a minimum of expense, the work of collecting the motor tax could be devolved on this Department and the designation required by the Federal Act could be made. This is merely repeating a recommendation made each year for several years past, and should not be considered as more than an offer to help with an economical solution of a very pressing and vital problem of great moment and concern to the development of the agricultural industry of the State.

That the Commissioner be empowered, without direct appropriations, to expand and increase the activities of the present State Bureau of Marketing, which, with the co-operation of the press of the State, is rendering such far-reaching service to individuals in the barter and exchange of products on the farm, and has proven the most effective and popular of all the undertakings of the Department.

That an Act specifically charging the Pure Food and Drug Inspection forces of the Department of Agriculture with the conduct of careful inspection of all dairies in the State, and requiring the enforcement by these inspectors of the laws that are now upon the statute books, which are ample, as to imitation butter and all other dairy products. These laws are at present merely enactments, it being nobody's business to enforce them, and they properly come under the work of the Pure Food and Drug Division of the Department.

That the Weights and Measures Act be slightly amended so as to require vendors to mark the guaranteed weights on the package, and to provide proper punishment for those selling short weight packages. The present law is extremely weak in this regard. Many of the complaints that come to the Department can not be handled because of this weakness of the law.

That the Condimental Food and Tonic Law be amended to make it conform to the provisions of the commercial feed stuffs and seed inspection laws.

That, inasmuch as this State is being flooded with so-called all-cure "tonics," composed of from 15 to 17 per cent of alcohol, with mere traces of glycerine, cascara (a laxative), gentian (a bitter drug—a so-called tonic) and licorice, which really could be prepared from one quart of sherry wine, two drams of cascara, two drams of licorice, one and one-fourth drams of glycerine and two drams of gentian at a cost of 24 cents per bottle, and which is sold for \$1.00 per bottle, and inasmuch as these concoctions are nothing more nor less than alcoholic beverages, and inasmuch as the sales are enormous, running into the thousands of dollars, and inasmuch as the sale cannot be stopped under either the National or State Pure Food and Drug laws, an Act be passed declaring beverages of such composition alcoholic beverages and prohibiting their sale in the State.

That some adequate inspection of hay shipped into the markets of the State and entering commerce be provided for.

That authority be given to prepare and issue during the year a hand book of the resources of the State, there having been no edition since 1908.

#### **THE SCOPE OF THE DEPARTMENT.**

The income of this Department is derived from the taxes paid principally by manufacturers outside of the State who have for many years been paying these same small taxes in every State almost with the exception of South Carolina until this Department was formed, and yet the prices charged to the people of this State were on the same basis as those in other States where the tax has always been paid. In other words, the imposition of this small tax has not increased the cost if anything one iota, for the manufacturers were simply putting into their own tills the amount that would have been paid for taxes.

The work of this Department is very diverse. We undertake to handle all of the purely business side of agriculture in the State from every standpoint, paying most particular attention to the conservation of the soil and the maintenance of soil fertility, and to this end we have, for instance, brought the price of inoculation per acre down from \$2.50 to 40c for the highest grade of inoculation material, and within the past year have succeeded in opening the marl beds of this State for the purpose of furnishing the most needed soil ingredients, namely, lime, to the farmers at practically the cost of production. Heretofore prices on lime have been almost prohibitive. Now we furnish through this Department the highest grade of marl, carrying a large percentage of phosphate, to the farmers of the State on an average to any point in the State at around \$2.13 per ton freight paid.

This Department has charge of all inspection work as to mixed animal feeds and human food and drugs, weights and measures, grains, etc., and the Department's officials and chemists are all United States officers also, enabling them to handle the interstate as well as the intrastate shipper. I am proud to say that our inspection work has been so thorough that we now have the reputation of being the one of the cleanest States in regard to these products to be found in the American Union, whereas a few years ago this State was the worst dumping ground of them all, and the class of products sent into South Carolina was al-



most inconceivable. In fact it was almost impossible for an honest man to do business in this State in these products.

The Department has full control also, and conducts a rigid inspection, of gasoline and kerosene products, and this State to-day is the only State, from Florida to New York on the Atlantic coast, where a man can buy gasoline, for instance, and know that he is getting his money's worth, or, in other words, good gasoline. In all the others, any kind of naphtha is sold at gasoline prices.

The Department has charge also of all factory inspection work in the State, and the enforcement of all labor laws designed to protect the people. A rigid inspection is conducted throughout the year, with the result that from the standpoint of the enforcement of labor protective laws I am willing to measure results with any State in the Union, not excepting the State of New York or the State of Massachusetts.

The Department also conducts and gathers annually all industrial and other statistics and keeps the world's attention as to what this State is doing.

The Department has also done an enormous amount of work in the matter of better public highways and in the furnishing of maps and information to the people. These are merely some of the many lines of work into which the Department's operations are divided. To this Department come requests for information on almost every conceivable subject relating to plant life, the animal world, the industrial world, and in fact practically everything, and the Department makes it its business to give correct and prompt attention to the humblest inquirer.

In field work, the Commissioner is eternally among the people, endeavoring at all times, without regard to politics, to get them to do those things that make for economic development and essential and material uplift. I believe we have the best Department, constructed upon the best lines of any department in the United States of America, and the many evidences of appreciation that we have from the people themselves show that a large proportion of our population at least are of that way of thinking. Certainly we stand in the outside world second to no department.

When I first began the work I undertook to conduct all of this class of constructive work with a view to as quickly as possible making the Department in the first place self-sustaining and in

the second place a source of revenue to the State. This point has been attained, notwithstanding that with each succeeding year additional work has been delegated to the Department by the General Assembly.

We are particularly proud of the service that we are now rendering to the masses of the producers of the State through our State Bureau of Marketing, enabling any farmer, no matter how far in the country he lives, to dispose of his surplus farm products at good figures. If we had never done anything else than to establish the one practical Marketing Bureau in the United States reaching down and helping each individual, all that the Department has cost would probably be more than offset by that one branch of the service.

It has been our endeavor to run this Department just the same as we would run a big department store business. Here honest, sincere work has been our watchword. At every stage of the game politics has been tabooed, and I have never permitted that destructive influence to enter into the work of the Department in any shape or form, and as long as I have anything to do with it that will continue to be the policy.

#### **THE FEDERAL FARM LOAN BANK.**

Just as soon as the Congress of the United States had enacted the National Rural Credits Act, and the Federal Farm Loan Board had been appointed, having aided for some years in the effort to secure this National legislation, I felt that one of the twelve banks ought to be located in South Carolina, at Columbia, and realizing that one of the essentials for securing such location would be the number of Farm Loan Associations, I immediately issued the following:

#### *To the Farmers of South Carolina:*

Now that the new Federal Farm Loan Act has been approved and the National Board has been appointed, steps are already being taken toward the organization of the twelve regional farm loan land banks, to be located so as to cover the whole country. The new Farm Loan Act is designed to provide capital for agricultural development, to create a standard form of investment based upon farm mortgages, and to equalize rates of interest upon farm loans. This Act, properly administered, should be the

greatest blessing that has come to the farmers of the Southern States.

It is exceedingly important that one of these twelve National Farm Loan Regional Banks shall be located in South Carolina. The Board is required by the law to locate these twelve banks with particular regard to the farm mortgage and loan needs of the several regions to be served. The capital city of South Carolina unquestionably meets the design and purpose of the Act as a location. I have particular reason to believe, and in fact feel warranted in making the assertion, that the selection of the location of each of these twelve banks will be largely influenced and determined by the number of National Farm Loan Associations formed in the rural districts of the several sections of the country. These associations are groups of not less than ten farmers who own land, or intend to own land, and farm it, and who wish to become borrowers, and there can be as many of them as there are school districts or communities in the country. Any ten men who wish to borrow from \$100 to \$10,000 each in the aggregate upon property twice the aggregate value of the loans, and a total of not less than \$20,000 for the ten, can get together at a local meeting and form a National Farm Loan Association, electing a President and Vice-President, five Directors and an Appraising Committee of three. They must be prepared to take \$5 in stock in the land bank for every \$100 borrowed, but this \$5 can be included in the loan if desired. The loans can be made from five to forty years, being retired upon the amortization plan.

It is not necessary right now, however, to do more than to get ten men together who intend to borrow collectively as much as \$20,000, and let them form the farm loan association, electing their officers and sending notice to the National Farm Loan Board at Washington that the association has been formed, and that further advices are awaited from the National Board.

If we are to get one of the twelve banks in Columbia I have every reason to say to the farmers of the State that it is vitally important that these group meetings be held all over the State immediately, that these associations be formed, and that the notice of such formation be sent into Washington. Chambers of Commerce and other organizations, of course, can do a great deal toward securing the location of the bank in South Carolina, but it is certain that the rapid formation of these farm land associations and the prompt transmission of notification will have a

much more far-reaching effect than anything else that can possibly be done.

I trust, therefore, that throughout the State in the next ten days meetings of this character will be held, following the simple plan outlined above, and that such a showing will be made at Washington that one of the banks will be located at the capital of South Carolina, or, for that matter, any other point in South Carolina that is adaptable. The point is that speedy action on the part of the farmers themselves will probably bring the result, whereas delay will almost certainly lose to the State the location of the bank. In some of our sister States already hundreds of these local associations have been formed, and the notices have already gone to Washington.

I would ask each association as it is formed to see that notice is sent to this Department as well as to Washington.

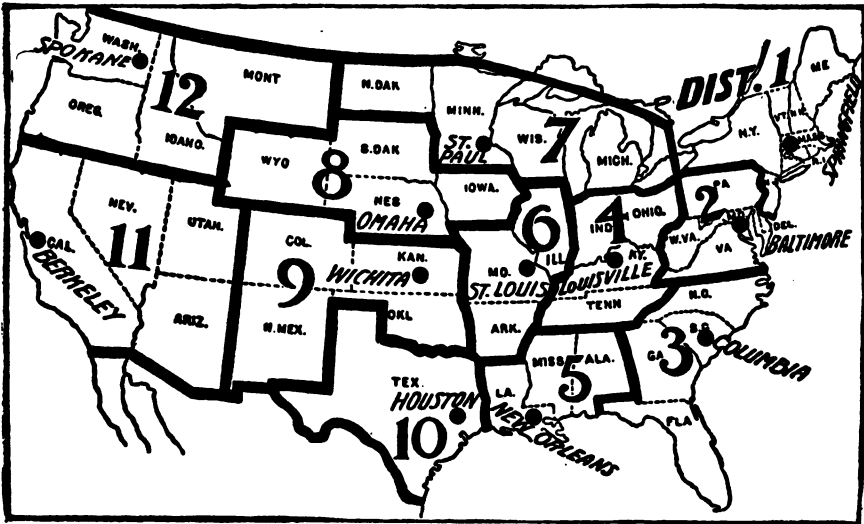
E. J. WATSON,

Commissioner of Agriculture, Commerce and Industries.

This was followed up with the distribution of proper blanks, and the Commissioner, using motor service, spent weeks going from point to point in the State organizing associations, sometimes several in a day. When the Board came to Columbia for the hearing on the location, upwards of 100 associations organized were presented with sufficient stock from this State alone to care for the bank for the entire district. A splendid showing otherwise was made by the Committee under the competent chairmanship of Speaker J. A. Hoyt, backed by delegations from other cities and towns, and when a short time ago the arrangement of districts was announced, Columbia was made the location of the Federal Farm Loan Bank for this District, which will be as follows:



The following shows our district in its relation to the others in the United States.



The Department has never ceased its work to organize the farmers into Loan Associations, and, as this is written, some 200 are ready to avail themselves of the advantages of the system as soon as the Regional Bank is ready for operation.

#### NATIONAL ASSOCIATION OF COMMISSIONERS OF AGRICULTURE.

In May the National Association of Commissioners of Agriculture was formed at a meeting held in the Senate office building in Washington. Forty-eight States went into the organization, and your Commissioner was unanimously elected to the presidency of the Association, with the Commissioner from Maine as vice-president. The organization at once got behind the National marketing measure now pending in Congress, and participated in the hearing on the question, the proceedings of which have just been published as a Senate document. In the fall the Association conferred with President Wilson at Shadow Lawn in the effort to bring about more effective co-operation between Federal and State forces and to eliminate much friction which had developed in many of the States under the operation of the Lever Extension Act.

#### THE SOUTHERN COMMERCIAL CONGRESS.

This year, in December, the Southern Commercial Congress met in Norfolk, Va., and there was a fine representation from this State at what proved to be one of the finest and most significant gatherings ever held in the South.

#### THE BOLL WEEVIL.

During the summer the board of trustees of Clemson College created a State Boll Weevil Commission, headed by the Governor, and in the fall the Commission toured the boll weevil infested States this side of the Mississippi. The Commissioner of Agriculture, owing to pressure of business at home, was prevented from making the tour, but began an active campaign for preparedness in the State.

The Commission since its return has published an admirable report prepared by President Riggs, and issued as Bulletin No. 20.

The first news of the rapid advance in the fall of the boll weevil to the line of the Savannah River came in December in the following letter:

Office and Laboratories of the State Entomologist,  
Atlanta, Ga., Dec. 5, 1916.

*Hon. E. J. Watson, Commissioner of Agriculture, Columbia, S. C.*

Dear Colonel Watson: You may be interested in knowing that the boll weevil now occurs in three counties bordering on your State, namely Burke, Effingham and Chatham. In Chatham County it perhaps is only fifteen miles from the Savannah River. The advance eastward this year has been about 150 miles, and with a favorable season next year the southern and eastern parts of your State will become infested by the weevil.

We are arranging to call a convention of the Sea Island growers of this State some time in January for the purpose of having a heart-to-heart talk with them on Sea Island cotton and the boll weevil, and we will be very glad indeed for the Sea Island growers of your State and Florida to meet with us. The experiments which we have conducted for a period of years on early fruiting varieties of Sea Island cotton are the only experiments that have ever been conducted. Our results are very promising indeed, and we are of the opinion that if the Sea Island growers will pursue the proper course they can continue to grow some cotton, but there

is a great danger of their becoming stampeded and trying to grow short cotton instead. This, as you know, will be very disastrous to the Sea Island industry. In view of the fact that Georgia, South Carolina and Florida raise all the Sea Island cotton grown in this country, I feel that we ought to pull together and do everything in our power to save this industry. Will you be willing to co-operate with us and urge your Sea Island men to attend the convention at some central point some time in January?

You are going to find in your work in South Carolina that you are going to need all the help that you can possibly get from every conceivable source in convincing the farmers and business men that the boll weevil is a permanent and serious factor in cotton production. Your problem in South Carolina is identical with that of Georgia, and I hope that whenever this Department can be of service to your good people, you will not hesitate to call on us.

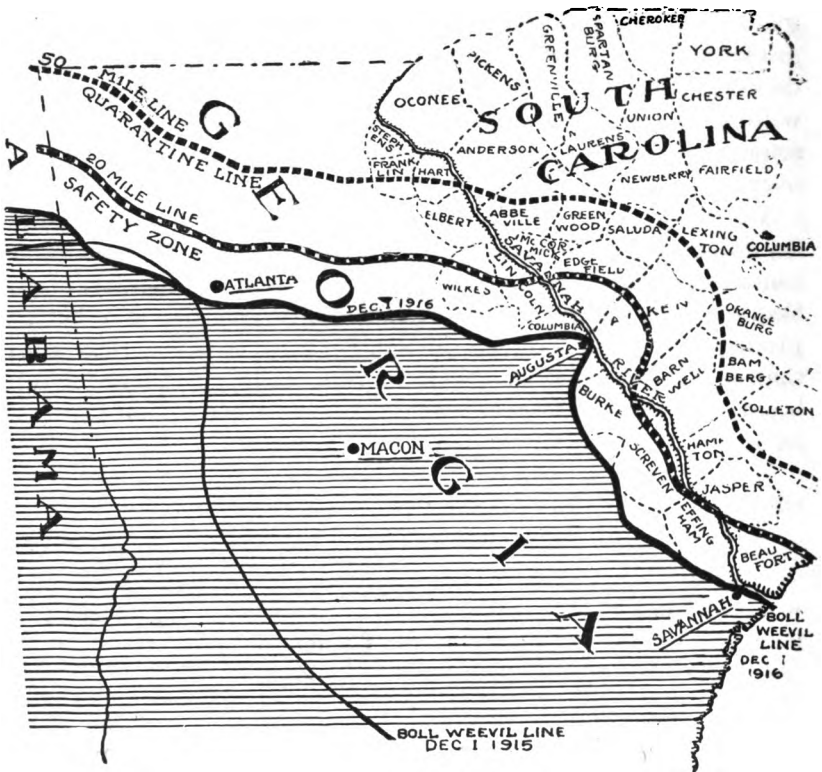
Hoping to hear from you at an early date, and with best wishes, I am,

Sincerely yours,

E. LEE WORSHAM,  
State Entomologist.



The following map shows the boll weevil line at December 1, 1915, and the line as it stood on December 1, 1916:



#### THE SOUTHEASTERN LAND SHOW.

Arrangements have been perfected, after consultation with officials and others in the several Southeastern States, for the holding in Atlanta, Ga., on February 1 to 15, 1917, of the Southeastern Land Show. The show is to be upon the lines of the great annual National Land Show, held in Chicago, and similar land shows held in Western and Northwestern States, and will be designed to exploit the natural resources, particularly agricultural, of the States of the Southeast at a time when Eastern and Middle Western visitors are in the South.

#### THE SUMMER FLOODS.

In July this State and North Carolina were visited on the Catawba and Broad River watersheds by the most disastrous

floods of recent years. Every important railway and highway bridge between the North Carolina line and the sea on the Catawba-Wateree system was swept away, and for weeks railway and public highway traffic between North and South was interrupted.

The Southern and Seaboard by temporary structures finally restored rail connection, and highway connection after a long period was re-established by ferries at Camden and near Gastonia, N. C.

There were extensive losses of crops, live stock and property not alone along these water courses but in some of the coastal plain counties. Federal Government aid was extended, and the Governor appointed a State Relief Commission. Inspectors of this Department were detailed and put to work to gather data for the Commission and for the Federal disbursing officers, and rendered valuable aid. All concerned did earnest relief work, and it was not long before most of the sufferers by the disaster had been succored.

#### **FINE WORK OF THE LABORATORIES.**

The laboratories of this Department, under the efficient direction of A. C. Summers, Chief Chemist, turn out about as much work perhaps as any in the country. The following brief summary, furnished to me by the Chief Chemist, shows the work at the laboratories for the year 1916; and speaks for itself:

|                                  |       |
|----------------------------------|-------|
| Samples of Feed Stuffs.....      | 1,227 |
| Samples of Corn Meal.....        | 391   |
| Samples of Corn Grits.....       | 32    |
| Samples of Corn.....             | 7     |
| Samples of Flour.....            | 7     |
| Samples of Seed.....             | 154   |
| Samples of Oats.....             | 42    |
| Special Feeds .....              | 62    |
| Samples of Beverages.....        | 94    |
| Special Seeds .....              | 69    |
| Samples of Gasoline.....         | 1,834 |
| Special Samples of Gasoline..... | 49    |
| Samples of Kerosene.....         | 918   |
| Special Samples of Kerosene..... | 2     |

Mr. Summers says: "The above tables show that we have analyzed almost five thousand samples during the past year, which

surpasses any previous year's work. This represents about 25,000 determinations which, if made singly, would represent from three to five hours each, but of course several samples were worked at the same time, thereby saving much time. Quadruplicate reports are made of each sample and mailed at the earliest possible moment to both manufacturer and dealer.

"The vacancies caused by the resignation of Mr. James Rhea to accept another position, and the leave of absence granted Dr. A. C. Doyle to serve on the Mexican border, were filled by Mr. H. H. Beard and Mr. C. E. Pettit, both of whom have proven themselves of valuable assistance to the Laboratory Staff. Upon the selection of these young men you are to be congratulated, and I assure you that their services have been satisfactory in every respect.

"I wish here to express my appreciation of your willingness and untiring efforts as well as the valuable assistance of the entire Departmental Staff in making the work at this laboratory successful during the past year."

## I.—AGRICULTURE.

The agricultural industry of the State this year has gone further forward from the money value viewpoint than ever before in the history of the State. The aggregate value of the agricultural products of the State has been \$192,468,000.00, which is an increase over the total value of all crops in the preceding year of \$43,841,000.00. The thirteen leading crops, exclusive of cotton seed, have aggregated in value \$148,200,000.00, an increase of \$33,757,000.00 over the year 1915. The nine principal crops, including cotton seed, have aggregated in value \$161,918,448.00, which is an increase of \$30,433,076.00 over last year. If we add in the crop of sweet potatoes to these nine leading crops we have a ten-crop value of \$166,743,448.00, an increase of \$31,322,074.00.

Never in the history of South Carolina agriculture has any such volume of values been produced from the soil in any one year. The high money value, however, was not due to increased production all along the line, but to the largely increased values of the products themselves, due to the economic changes going on in the country at large. The cotton crop has only reached 952,080 bales, against 1,134,000 in 1915. The corn crop fell off more than three million bushels, but increased considerably over \$5,000,000.00 in value. The wheat crop lacked about 200,000 bushels of being as large as that of 1915, but was worth nearly a million dollars more. The oat crop was nearly a million bushels under the crop of 1915, but nearly a million bushels above in value. The tobacco crop fell off nearly seventeen million pounds, but brought more money than the big crop of 1915. The sweet potato crop was a million two hundred thousand bushels short, but brought nearly four hundred thousand dollars more than the 1915 crop. The rice crop has almost ceased to exist as a crop.

This year 5,916,500 acres were planted, as against 5,698,700 last year, devoted to the nine leading crops.

During the year the seasons were bad as a rule, and at the maturing season there came floods and storms which in some sections of the State did incalculable damage. In this way the corn crop was very considerably reduced, and the same thing was true of cotton.

The following tables show comparisons for the past five years of the nine leading crops, which speak for themselves:

## ACREAGE.

|                | 1912.     | 1913.     | 1914.     | 1915.     | 1916.     |
|----------------|-----------|-----------|-----------|-----------|-----------|
| Corn .....     | 1,915,000 | 1,975,000 | 1,975,000 | 2,130,000 | 2,065,000 |
| Wheat .....    | 79,000    | 79,000    | 80,000    | 225,000   | 210,000   |
| Oats .....     | 324,000   | 360,000   | 375,000   | 525,000   | 500,000   |
| Rye .....      | 3,000     | 3,000     | 3,000     | 3,000     | 5,000     |
| Potatoes ..... | 10,000    | 10,000    | 11,000    | 11,000    | 10,000    |
| Hay .....      | 194,000   | 210,000   | 210,000   | 220,000   | 250,000   |
| Cotton .....   | 2,604,000 | 2,701,000 | 2,861,000 | 2,516,000 | 2,334,000 |
| Tobacco .....  | 35,000    | 43,800    | 50,000    | 65,000    | 39,000    |
| Rice .....     | 8,000     | 4,900     | 6,900     | 3,700     | 3,500     |
|                | 5,172,000 | 5,386,700 | 5,571,900 | 5,698,700 | 5,916,500 |

Sweet potatoes, 1916—66,000.

Sweet potatoes, 1915—65,000.

Sweet potatoes, 1914—48,000.

## PRODUCTION.

|                     | 1912.      | 1913.      | 1914.      | 1915.      | 1916.      |
|---------------------|------------|------------|------------|------------|------------|
| Corn (bu.).....     | 34,278,000 | 38,512,000 | 36,538,000 | 35,145,000 | 32,008,000 |
| Wheat (bu.).....    | 727,000    | 972,000    | 920,000    | 2,430,000  | 2,226,000  |
| Oats (bu.).....     | 6,966,000  | 8,460,000  | 7,500,000  | 9,975,000  | 9,000,000  |
| Rye (bu.).....      | 25,000     | 32,000     | 34,000     | 30,000     | 49,000     |
| Potatoes (bu.)..... | 900,000    | 800,000    | 770,000    | 880,000    | 750,000    |
| Hay (tons).....     | 223,000    | 244,000    | 242,000    | 236,000    | 225,000    |
| Cotton (bales)..... | 1,184,000  | 1,378,000  | 1,534,000  | 1,134,000  | 962,000    |
| Tobacco (lbs.)..... | 24,600,000 | 33,288,000 | 41,101,651 | 37,995,284 | 20,079,908 |
| Rice (bu.).....     | 200,000    | 147,000    | 179,000    | 90,000     | 49,000     |

Sweet potatoes (bu.), 1916—5,676,000.

Sweet potatoes (bu.), 1915—6,825,000.

Sweet potatoes (bu.), 1914—4,080,000.

## VALUE OF PRODUCTS.

|                     | 1912.         | 1913.         | 1914.         | 1915.         | 1916.         |
|---------------------|---------------|---------------|---------------|---------------|---------------|
| Cotton .....        | \$90,300,000  | \$104,340,000 | \$73,700,000  | \$51,980,000  | \$104,585,000 |
| Corn .....          | 29,138,000    | 37,357,000    | 33,614,960    | 30,576,000    | 36,169,000    |
| Hay .....           | 4,014,000     | 4,563,000     | 4,414,000     | 4,462,000     | 5,428,000     |
| Wheat .....         | 865,000       | 1,264,000     | 1,334,000     | 3,353,000     | 4,207,000     |
| Oats .....          | 4,598,000     | 6,007,000     | 5,325,000     | 6,683,000     | 7,200,000     |
| Tobacco .....       | 2,670,000     | 4,594,000     | 3,979,303     | 2,765,372     | 2,313,448     |
| Irish Potatoes..... | 1,008,000     | 1,040,000     | 962,000       | 1,012,000     | 1,312,000     |
| Rye .....           | 41,000        | 48,000        | 51,000        | 168,000       | 198,000       |
| Rice .....          | 186,000       | 132,000       | 165,000       | 6,000         | 6,000         |
|                     | \$122,818,000 | \$159,345,000 | \$123,545,263 | \$130,985,372 | \$161,918,448 |

Sweet potatoes, 1916—\$4,825,000.

Sweet potatoes, 1915—4,436,000.

Sweet potatoes, 1914—2,856,000.

## YIELD PER ACRE.

| (United States).        |       |       |       |       |       |
|-------------------------|-------|-------|-------|-------|-------|
|                         | 1912. | 1913. | 1914. | 1915. | 1916. |
| Cotton (lbs. lint)..... | 193.2 | 182.0 | 200.2 | 170.3 | 156.3 |
| Corn (bushels).....     | 29.2  | 23.1  | 25.8  | 28.2  | 24.4  |
| Wheat (bushels).....    | 15.1  | 15.2  | 16.6  | 17.0  | 12.1  |
| Oats (bushels).....     | 37.4  | 29.2  | 29.7  | 37.8  | 30.1  |
| Potatoes (bushels)..... | 113.4 | 90.4  | 109.5 | 96.3  | 80.4  |
| Tobacco (pounds).....   | 785.5 | 784.3 | 845.7 | 775.4 | 815.0 |
| Rye (bushels).....      | 16.8  | 16.2  | 16.8  | 17.3  | 15.3  |
| Hay (tons).....         | 1.47  | 1.31  | 1.43  | 1.68  | 1.64  |
| Rice (bushels).....     | 34.7  | 31.1  | 34.1  | 36.1  | 47.8  |
| (South Carolina).       |       |       |       |       |       |
| Cotton (lbs. lint)..... | 219.0 | 235.0 | 290.0 | 215.0 | 155.0 |
| Corn (bushels).....     | 17.9  | 20.0  | 18.5  | 16.5  | 15.5  |
| Wheat (bushels).....    | 9.2   | 12.3  | 11.5  | 11.0  | 11.4  |
| Oats (bushels).....     | 21.5  | 23.5  | 20.0  | 19.0  | 18.0  |
| Potatoes (bushels)..... | 90.0  | 80.0  | 70.0  | 80.0  | 75.0  |
| Tobacco (pounds).....   | 700.0 | 760.0 | 730.0 | 730.0 | 580.0 |
| Rye (bushels).....      | 9.5   | 10.5  | 11.5  | 10.0  | 9.8   |
| Hay (tons).....         | 1.15  | 1.16  | 1.15  | 1.30  | 1.30  |
| Rice (bushels).....     | 25.0  | 30.0  | 26.0  | 24.3  | 14.0  |

## THE TOBACCO CROP.

The Department, under the law, began to keep records of the tobacco crop in 1909. That year very nearly 28,000,000 pounds of tobacco were raised, but the price was low, and it brought but little over two and a quarter million dollars. The two following years the crop decreased very considerably in both volume and in amount of money produced. Then for four years consecutively the volume of the crop steadily increased, until the maximum was reached in 1914, the year the war broke out. The preceding year a smaller crop had sold at 13.77 cents per pound, bringing to the farmers \$4,584,000.00, the greatest amount ever received from the tobacco crop in this State. In 1914 the price fell, and in 1915, while people still planted tobacco, and raised a big crop, the amount received from it was only \$2,765,372.00, the price having fallen to the lowest figure recorded since 1909, 7.02 cents per pound. The total number of pounds raised last year was 37,995,284. This year, with a crop of only 20,079,903 pounds, the smallest crop, with the exception of those of 1910 and 1911, the price went to a higher figure than ever before, 14.11 cents, and has brought to the farmers \$2,813,448.87. This year the crop was marketed early, and there were no October sales at all.

During the season twenty-two markets were operated. Lake City led in the matter of pounds marketed, with Mullins a close second, but Mullins led all the markets of the State by very nearly a hundred thousand dollars in the amount received from the sales of tobacco, Lake City coming second, and Timmons ville third.

The following summarized table gives the comparative totals of pounds sold, amount paid and average price for each year:

| Year.      | Pounds<br>Sold. | Amount<br>Paid. | Price. |
|------------|-----------------|-----------------|--------|
| 1909 ..... | 27,843,694      | \$2,315,107 33  | 8.35   |
| 1910 ..... | 18,802,875      | 1,604,685 44    | 8.53   |
| 1911 ..... | 11,101,066      | 1,352,462 84    | 12.18  |
| 1912 ..... | 24,337,912      | 2,653,443 68    | 10.90  |
| 1913 ..... | 33,299,561      | 4,584,339 51    | 13.77  |
| 1914 ..... | 41,101,651      | 3,979,303 82    | 9.68   |
| 1915 ..... | 37,995,284      | 2,765,372 10    | 7.02   |
| 1916 ..... | 20,079,903      | 2,813,448 87    | 14.11  |

The detailed reports on tobacco by months and markets are as follows:

## TOTAL SALES OF TOBACCO IN SOUTH CAROLINA BY MARKETS—CROP 1916.

| Markets.            | July.   |             | August.    |                | September. |             | Grand Total Sales for 1916. |                |
|---------------------|---------|-------------|------------|----------------|------------|-------------|-----------------------------|----------------|
|                     | Pounds. | Amount.     | Pounds.    | Amount.        | Pounds.    | Amount.     | Pounds Sold.                | Amount Paid.   |
| Andrews .....       | .....   | .....       | 88,875     | \$4,771 86     | .....      | .....       | 88,875                      | \$4,771 86     |
| Aynor .....         | .....   | .....       | 1,006,991  | 136,763 83     | .....      | .....       | 1,006,991                   | 136,763 83     |
| Conway .....        | .....   | .....       | 733,736    | 90,139 72      | .....      | .....       | 733,736                     | 90,139 72      |
| Darlington .....    | .....   | .....       | 1,332,824  | 202,119 68     | 98,748     | 13,867 10   | 1,431,572                   | 215,986 78     |
| Dillon .....        | 35,045  | \$3,064 54  | 780,724    | 119,950 31     | 91,997     | 13,064 21   | 907,766                     | 136,069 06     |
| Florence .....      | .....   | .....       | 553,748    | 80,851 09      | 46,879     | 6,734 43    | 600,627                     | 87,585 57      |
| Hartsville .....    | .....   | .....       | 612,518    | 91,178 02      | 7,068      | 860 30      | 619,576                     | 92,038 82      |
| Hemingway .....     | .....   | .....       | 567,397    | 68,041 12      | .....      | .....       | 567,397                     | 68,041 12      |
| Johnsonville .....  | .....   | .....       | 224,027    | 27,646 14      | .....      | .....       | 224,027                     | 27,646 14      |
| Kingstree .....     | .....   | .....       | 988,718    | 106,340 45     | .....      | .....       | 988,718                     | 106,340 45     |
| Lake City .....     | 160,229 | 13,066 05   | 2,625,976  | 347,119 42     | 13,283     | 1,187 88    | 2,796,438                   | 361,373 35     |
| Lake View .....     | 61,692  | 4,715 61    | 424,457    | 58,336 61      | .....      | .....       | 486,149                     | 63,101 22      |
| Lamar .....         | 23,596  | 1,615 63    | 4,484      | 401 07         | .....      | .....       | 28,080                      | 3,016 70       |
| Marion .....        | 184,964 | 15,899 14   | 920,461    | 126,113 66     | 2,272      | 232 73      | 1,107,697                   | 142,245 53     |
| Manning .....       | .....   | .....       | 580,209    | 83,087 17      | 4,243      | 620 30      | 584,452                     | 83,637 46      |
| Mullins .....       | .....   | .....       | 714,297    | 83,093 16      | .....      | .....       | 714,297                     | 83,093 16      |
| Nichols .....       | .....   | .....       | 2,643,312  | 444,093 56     | 102,818    | 14,657 60   | 2,746,130                   | 458,751 16     |
| Oanta .....         | 192,290 | 13,472 77   | 1,927,103  | 294,445 52     | 31,095     | 4,788 97    | 1,550,488                   | 232,707 26     |
| Planters .....      | .....   | .....       | 423,065    | 53,768 04      | .....      | .....       | 423,065                     | 53,768 04      |
| Pamplico .....      | .....   | .....       | 409,124    | 57,108 12      | .....      | .....       | 409,124                     | 57,108 12      |
| Sumter .....        | .....   | .....       | 318,511    | 34,474 08      | .....      | .....       | 318,511                     | 34,474 08      |
| Timmons ville ..... | .....   | .....       | 1,706,213  | 268,713 06     | 39,674     | 6,066 89    | 1,745,887                   | 274,779 94     |
| Total .....         | 657,816 | \$51,893 74 | 18,984,070 | \$2,699,544 68 | 438,017    | \$62,070 45 | 20,079,903                  | \$2,813,448 87 |

**SOUTH CAROLINA TOBACCO REPORT.**  
**July, 1916—By Markets—6 Markets; 9 Warehouses.**

| Markets.        | Sold for Producers. |              | Sold for Dealers. |              | Sold by Warehouseman. |              | Grand Total Sales. |              |
|-----------------|---------------------|--------------|-------------------|--------------|-----------------------|--------------|--------------------|--------------|
|                 | Pounds Sold.        | Amount Paid. | Pounds Sold.      | Amount Paid. | Pounds Sold.          | Amount Paid. | Pounds Sold.       | Amount Paid. |
| Dillon .....    | 35,045              | \$3,064 54   | 353               | \$54 78      | 2,275                 | \$243 40     | 37,673             | \$3,362 72   |
| Lake City ..... | 160,229             | 13,066 05    | .....             | .....        | 1,668                 | 135 75       | 161,897            | 13,201 80    |
| Lake View ..... | 61,692              | 4,715 61     | 1,577             | 150 11       | 8,928                 | 824 25       | 72,197             | 5,689 97     |
| Loris .....     | 184,964             | 15,899 14    | .....             | .....        | 154                   | 7 97         | 23,750             | 1,623 60     |
| Lamar .....     | 23,596              | 1,615 63     | 14,817            | 1,667 33     | 14,170                | 1,069 19     | 213,951            | 15,655 66    |
| Nichols .....   | 192,390             | 13,472 77    | 46,018            | 3,318 64     | .....                 | .....        | 238,398            | 16,791 41    |
| Total.....      | 657,816             | \$51,833 74  | 62,765            | \$5,190 86   | 27,195                | \$2,310 56   | 747,776            | \$59,335 16  |

**COMPARISON FOR MONTH OF JULY FOR 1910-11-12-13-14-15-16.**  
**Sold For Producers.**

| Year.      | Pounds Sold. | Amount Paid. | Average Price Paid. |
|------------|--------------|--------------|---------------------|
| 1910 ..... | 2,063,385    | \$105,992 30 | 5.12                |
| 1911 ..... | .....        | 62,195 88    | 6.50                |
| 1912 ..... | 944,301      | 381,604 95   | 7.53                |
| 1913 ..... | 5,064,065    | 1,094,415 34 | 12.53               |
| 1914 ..... | 8,731,789    | 387,762 31   | 10.04               |
| 1915 ..... | 3,862,846    | 145,499 23   | 4.31                |
| 1916 ..... | 3,375,716    | 51,833 74    | 7.88                |

Comparison shows a decrease of 1916 from 1915 of 2,720,900 pounds and \$93,665 49.



**SOUTH CAROLINA TOBACCO REPORT.**  
**August, 1916—By Markets—22 Markets; 46 Warehouses.**

| Markets.            | Sold for Producers. |                | Sold for Dealers. |              | Sold by Warehouseman. |              | Grand Total Sales. |                |
|---------------------|---------------------|----------------|-------------------|--------------|-----------------------|--------------|--------------------|----------------|
|                     | Pounds Sold.        | Amount Paid.   | Pounds Sold.      | Amount Paid. | Pounds Sold.          | Amount Paid. | Pounds Sold.       | Amount Paid.   |
| Andrews .....       | 88,876              | \$6,771 86     | .....             | .....        | 5,786                 | \$443 40     | 94,660             | \$7,215 26     |
| Aynor .....         | 1,006,991           | 136,768 83     | 37,653            | \$4,974 06   | 54,729                | 6,824 39     | 1,099,373          | 148,662 27     |
| Conway .....        | 733,736             | 90,139 72      | 15,415            | 2,100 83     | 50,680                | 5,219 56     | 799,831            | 97,490 11      |
| Darlington .....    | 1,332,824           | 202,119 68     | 51,943            | 6,295 62     | 81,148                | 11,465 34    | 219,890 64         | 27,880 64      |
| Dillon .....        | 780,724             | 119,950 81     | 24,455            | 3,971 40     | 71,927                | 12,565 73    | 877,106            | 136,487 44     |
| Florence .....      | 563,748             | 80,851 09      | 99,632            | 19,749 84    | 31,706                | 5,325 01     | 685,086            | 106,925 94     |
| Hartsville .....    | 612,518             | 91,178 02      | 73,665            | 10,928 80    | 96,104                | 13,160 57    | 782,287            | 115,167 19     |
| Hemingway .....     | 567,397             | 68,041 12      | 24,344            | 2,622 18     | 45,060                | 4,372 92     | 686,801            | 75,086 82      |
| Johnsonton .....    | 224,027             | 27,646 14      | 3,714             | 600 75       | 14,774                | 1,635 49     | 242,515            | 29,882 88      |
| Kingstree .....     | 988,718             | 106,840 45     | 2,384             | 174 50       | 85,968                | 8,865 02     | 1,077,096          | 115,879 97     |
| Lake City .....     | 2,625,976           | 347,119 42     | 84,036            | 10,947 05    | 193,381               | 21,459 12    | 2,903,393          | 379,525 59     |
| Lake View .....     | 424,457             | 58,385 61      | 10,832            | 1,651 60     | 41,875                | 1,970 87     | 476,664            | 65,008 08      |
| Lamar .....         | 4,484               | 401 07         | .....             | .....        | 4,668                 | 555 67       | 9,142              | 766 74         |
| Loris .....         | 920,461             | 126,113 66     | 98,370            | 15,338 09    | 190,713               | 20,317 07    | 1,204,544          | 161,768 82     |
| Marion .....        | 580,209             | 93,037 17      | 30,219            | 4,734 45     | 53,141                | 9,343 83     | 683,569            | 107,114 95     |
| Manning .....       | 714,297             | 83,096 16      | 3,905             | 428 45       | 58,544                | 6,190 92     | 89,715 58          | 89,715 58      |
| Mullins .....       | 2,643,312           | 444,093 56     | 152,009           | 23,690 19    | 296,819               | 45,391 20    | 3,091,140          | 513,644 95     |
| Nichols .....       | 1,327,108           | 204,445 62     | 71,496            | 11,293 60    | .....                 | .....        | 1,398,589          | 215,739 12     |
| Olantha .....       | 423,065             | 52,758 04      | 6,728             | 734 76       | 79,456                | 9,751 47     | 509,240            | 63,244 27      |
| Pamplico .....      | 409,124             | 57,105 12      | 4,513             | 554 45       | 34,775                | 3,740 74     | 448,412            | 61,400 81      |
| Sumter .....        | 318,811             | 34,474 08      | 904               | 178 01       | 27,574                | 2,710 05     | 347,289            | 37,392 14      |
| Timmons ville ..... | 1,768,213           | 268,713 06     | 106,513           | 17,457 53    | 105,746               | 17,440 73    | 1,915,472          | 308,611 81     |
| Total .....         | 18,984,070          | \$2,699,544 68 | 897,720           | \$138,285 85 | 1,623,087             | \$212,048 60 | 21,504,877         | \$3,049,879 13 |

**COMPARISON FOR MONTH OF AUGUST, 1910 TO 1916.**  
**Sold For Producers.**

| Year.      | Pounds Sold. | Amount Paid. | Average Price Paid. |
|------------|--------------|--------------|---------------------|
| 1910 ..... | 8,544,824    | \$728,690 21 | 8.52                |
| 1911 ..... | 5,154,931    | 669,857 38   | 12.80               |
| 1912 ..... | 16,209,130   | 1,906,986 25 | 11.76               |
| 1913 ..... | 19,208,179   | 2,780,866 08 | 14.46               |
| 1914 ..... | 16,063,067   | 1,770,292 05 | 11.02               |
| 1915 ..... | 21,631,676   | 1,700,100 00 | 7.86                |
| 1916 ..... | 18,984,070   | 2,699,544 68 | 14.22               |

Comparison shows a decrease for 1916 over 1915 of 2,647,606 pounds, but an increase in the amount paid of \$989,444.68; the price averaging 14.22 cents per pound in 1916, as compared with 7.86 per pound in 1915.

**SOUTH CAROLINA TOBACCO REPORT.**  
September, 1916—By Markets—10 Markets; 20 Warehouses.

| Markets.            | Sold for Producers. |              | Sold for Dealers. |              | Sold by Warehouseman. |              | Grand Total Sales. |              |
|---------------------|---------------------|--------------|-------------------|--------------|-----------------------|--------------|--------------------|--------------|
|                     | Pounds Sold.        | Amount Paid. | Pounds Sold.      | Amount Paid. | Pounds Sold.          | Amount Paid. | Pounds Sold.       | Amount Paid. |
| Andrews .....       | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Aynor .....         | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Conway .....        | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Darlington .....    | 98,748              | \$13,967 10  | 2,788             | \$246 08     | 14,413                | \$1,693 69   | 116,949            | \$15,706 72  |
| Dillon .....        | 91,997              | 13,064 21    | 6,281             | 990 15       | 24,293                | 3,680 09     | 122,571            | 17,624 45    |
| Flora .....         | 46,879              | 6,734 48     | 66,583            | 12,565 65    | 4,986                 | 524 30       | 117,447            | 19,824 43    |
| Hartsville .....    | 7,068               | 860 80       | .....             | .....        | 180                   | 14 40        | 7,188              | 874 70       |
| Hemingway .....     | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Johnsonville .....  | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Kingsree .....      | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Lake City .....     | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Lake View .....     | 13,233              | 1,187 88     | .....             | .....        | 28                    | 2 63         | 13,261             | 1,190 51     |
| Lamar .....         | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Loris .....         | 2,272               | 232 78       | .....             | .....        | .....                 | .....        | .....              | .....        |
| Marion .....        | 4,243               | 620 29       | 310               | 77 50        | 9,345                 | 601 98       | 11,927             | 912 21       |
| Manning .....       | 102,818             | 14,657 60    | 837               | 124 50       | 318                   | 60 42        | 5,398              | 805 21       |
| Mullins .....       | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Nichols .....       | 31,095              | 4,788 97     | 32,961            | 4,508 87     | 51,518                | 5,420 41     | 187,297            | 24,696 88    |
| Olanda .....        | .....               | .....        | .....             | .....        | .....                 | .....        | 36,154             | 5,633 96     |
| Pamlico .....       | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Sumter .....        | .....               | .....        | .....             | .....        | .....                 | .....        | .....              | .....        |
| Timmons ville ..... | 39,672              | 6,066 89     | 2,063             | 173 92       | 12,146                | 1,606 74     | 53,883             | 7,846 55     |
| Total .....         | 438,017             | \$62,070 45  | 115,832           | \$19,531 61  | 117,176               | \$13,408 56  | 671,075            | \$95,005 62  |

COMPARISON FOR MONTH OF SEPTEMBER, 1910 TO 1916.  
Sold For Producers.

| Year.      | Pounds<br>Sold. | Amount<br>Paid. | Average<br>Price Paid. |
|------------|-----------------|-----------------|------------------------|
| 1910 ..... | 7,419,848       | \$695,116 02    | 9.37                   |
| 1911 ..... | 4,978,763       | 628,160 44      | 12.61                  |
| 1912 ..... | 8,084,697       | 924,948 46      | 11.40                  |
| 1913 ..... | 5,859,588       | 709,068 14      | 13.28                  |
| 1914 ..... | 10,552,988      | 1,723,189 18    | 8.81                   |
| 1915 ..... | 12,914,004      | 915,882 05      | 7.09                   |
| 1916 ..... | 488,017         | 62,070 45       | 14.18                  |

Comparison shows a decrease for month of 12,475,987 pounds, and \$638,312.50; while the average price per pound was exactly doubled.

SOUTH CAROLINA TOBACCO REPORT BY GRADES-LEAF.

July, 1916, 6 Markets; 9 Warehouses. August, 1916, 22 Markets; 46 Warehouses. September, 1916, 10 Markets; 20 Warehouses.

|                 | Sold for Producers. |                 | Sold for Dealers. |                 | Sold by Warehouseman. |                 | Grand Total Sales. |                 |
|-----------------|---------------------|-----------------|-------------------|-----------------|-----------------------|-----------------|--------------------|-----------------|
|                 | Pounds<br>Sold.     | Amount<br>Paid. | Pounds<br>Sold.   | Amount<br>Paid. | Pounds<br>Sold.       | Amount<br>Paid. | Pounds<br>Sold.    | Amount<br>Paid. |
| July .....      | 657,816             | \$51,833 74     | 62,765            | \$5,180 86      | 27,175                | \$2,310 56      | 747,776            | \$59,335 16     |
| August .....    | 18,884,070          | 2,649,544 68    | 897,720           | 138,286 86      | 1,623,057             | 212,048 60      | 21,504,577         | 3,049,879 13    |
| September ..... | 488,017             | 62,070 45       | 115,862           | 19,681 61       | 117,176               | 13,408 56       | 671,075            | 96,066 62       |

TOTAL SALES FOR JULY, AUGUST AND SEPTEMBER.

| Year.      | Pounds<br>Sold. | Amount<br>Paid. | Average<br>Price Paid. |
|------------|-----------------|-----------------|------------------------|
| 1910 ..... | 18,992,875      | \$1,604,685 44  | 8.53                   |
| 1911 ..... | 11,101,066      | 1,352,462 84    | 12.18                  |
| 1912 ..... | 24,837,912      | 2,653,448 66    | 10.90                  |
| 1913 ..... | 88,299,561      | 4,684,889 51    | 13.76                  |
| 1914 ..... | 89,478,421      | 3,881,288 54    | 9.88                   |
| 1915 ..... | 37,924,896      | 2,760,962 19    | 7.28                   |
| 1916 ..... | 20,079,908      | 2,813,448 87    | 14.11                  |

Comparison for total sales of tobacco sold for producers for 1916 shows a decrease in pounds of 17,844,498, while the producers received an increase of \$52,466.69 over the year 1915.

### THE RICE INDUSTRY.

The reduction in acreage in rice from that of 1915, together with effects of the storm that visited our coast in July, reduced the milling crop for 1916 to the lowest point since the storm of 1893. The receipts of rough rices at West Point Mills, Charleston, from the crop of 1916 will aggregate 53,000 bushels drawn from South Carolina and Georgia plantations. The crops between Charleston and Georgetown and around Georgetown were all completely destroyed and no crop of rice has been received from these sections this season. There has been reserved on plantations for seed for 1917 an amount estimated at 5,000 to 8,000 bushels in the three States of North Carolina, South Carolina and Georgia.

The probable acreage for 1917 is uncertain, but from information obtained to this time, it will amount to ten or fifteen per cent. below 1916. The prices have been most disappointing and values have been lower on rice than at the corresponding season of 1915. This is probably due to the enormous estimates of yields along the Gulf Coast and in Arkansas. California has also become a very large producer, and a crop of 1,500,000 bags—100 pounds each of rough rice, will be harvested in that State this season.

It seems inexplicable that with the excessive increase of values in all food stuffs, that one of the cheapest and most nutritious should be neglected by the people of the United States, who are raising such a clamor over high cost of food and living.

Gratifying results have been obtained in experimenting with a large variety of products in the abandoned rice fields during the past year, and cotton, corn and other products will supplant rice to a great extent in the near future.

### THE TRUCKING INDUSTRY.

The trucking industry in the State continues to be one of the most important phases of agriculture. Gradually the area devoted to trucking exclusively for the Northern and Eastern markets is being increased. The industry is still confined almost exclusively to the coastal plain, and the operations are principally around Charleston, on the Sea Islands, in and around Beaufort, in Georgetown County, and in Horry County. The opportunities, however, in trucking are not yet as wholly developed as they ought to be, and very likely will be in the near future. Changed economic conditions will very likely make the season of 1917 one of the most profitable and extensive in the history of the industry.

The opening of new shipping territory by the Seaboard's Savannah line will have a marked influence on the future.

From a money standpoint the center of the industry is still in the Charleston district. A very careful investigation of the operations in the Charleston district for the year 1914 shows that the net cash results from the operations conducted in the district were less for the year than during the preceding year of 1913.

The total acreage planted in the Charleston district in 1913 was 21,500. In 1914 the best available figures show a total acreage planted of 19,500. Last year it was 20,700. This year the acreage was 20,300. The total sum realized in the Charleston district in 1913 was \$3,110,250.00. In 1914 this amount was \$2,517,500.00, a decrease in money value of \$592,750.00. Last year it was \$2,971,500.00, an increase almost as great as the preceding year's decrease. This year it was \$4,458,900.00, very nearly double last year.

The following table shows the acreage, the yield per acre, total production, the net price per package and the total amount realized from the several divisions of the trucking industry pursued by the truck farmers in the district; there is also appended a statement of the field crops as they are so closely related:

| Truck Crop.          | Acres. | Yield Per Acre.      | Total.       | F. O. B. Price.         | Total.         |
|----------------------|--------|----------------------|--------------|-------------------------|----------------|
| Potatoes (Irish).... | 8,000  | 40 barrels ....      | 320,000      | \$3.75 per barrel ..... | \$1,200,000 00 |
| Cabbage .....        | 4,500  | 180 crates ....      | 810,000      | 1.35 per crate .....    | 1,085,000 00   |
| Cucumbers .....      | 2,000  | 200 baskets ....     | 400,000      | 1.20 per basket .....   | 480,000 00     |
| Beans .....          | 1,500  | 120 baskets ....     | 180,000      | 1.10 per basket .....   | 198,000 00     |
| Peas .....           | 500    | 100 baskets ....     | 50,000       | 1.25 per basket .....   | 62,500 00      |
| Potatoes (sweet)...  | 1,200  | 80 barrels ....      | 96,000       | 1.65 per sack .....     | 158,400 00     |
| Cabbage Plants....   | 600    | 500,000 plants ..... | \$90,000,000 | .75 per thousand .....  | 225,000 00     |
| Miscellaneous veg.   | 2,000  |                      |              |                         | 200,000 00     |
|                      | 20,300 |                      |              |                         | \$4,458,900 00 |

#### FIELD CROPS.

|                       |               | Yield per Acre. | Total           | F. O. B. Price. | Total.             |
|-----------------------|---------------|-----------------|-----------------|-----------------|--------------------|
| Short staple cotton.. | 8,000 planted | as first crop.. | 125 lbs. lint.. | 1,000,000       | \$.18 \$180,000 00 |
| Short staple cotton.. | 7,000 planted | after truck..   | 150 .. ..       | 1,050,000       | .18 189,000 00     |
| Corn, first crop..... | 8,000 planted | as first crop.. | 15 .. ..        | 120,000         | 1.10 132,000 00    |
| Corn .....            | 8,000 planted | after truck..   | 15 .. ..        | 120,000         | 1.10 132,000 00    |
| Peanuts .....         | 200 .. ..     | .. ..           | ¼ ton .....     | 150             | 80.00 12,000 00    |
| Forage crops .....    | 5,000 .. ..   | .. ..           | 2 tons .....    | 10,000          | 17.00 170,000 00   |
| Long staple cotton..  | 17,000 .. ..  | .. ..           | 125 lbs. lint.. | 2,125,000       | .50 1,062,500 00   |
| Cotton seed .....     | 32,000 .. ..  | .. ..           | .. ..           | 7,875           | 80.00 472,500 00   |
|                       |               |                 |                 |                 | \$2,850,000 00     |

The total value of products in the district last year was \$5,394,000.00.

Very marked headway has been made with the trucking industry in Beaufort, around Georgetown and in Williamsburg and Horry Counties, but it has been impossible to secure accurate figures on production and values. The trucking and small fruit

industries, however, have probably produced on the whole in 1916 around \$8,000,000.00.

#### **SOUTH CAROLINA PRODUCE ASSOCIATION.**

The South Carolina Produce Association, of which J. M. Harrison is president, and D. Q. Towles is manager, secretary and treasurer, is doing effective work in the marketing of the truck raised in the district around Meggetts, which is the headquarters of the Association:

The following report filed with me on December 9 by Mr. Towles is of especial interest:

"We beg to hand you a statement showing the number of packages sold and consigned and the amount of money received both ways and the average price per package. The number of cars shipped, the number of packages shipped in 1915 and 1916, and the value of each. Also a financial statement of the Association at present.

"You will note that we have a total surplus of \$17,382.49, whereas our capital paid in is only \$6,788.00, which is 40 per cent. of the capital paid in. You will note that it will not be necessary for us to call for cash payment of stock in full. We are paying this in with a 10 per cent. dividend each year. We hope to have enough surplus and capital six years hence to be able to purchase all of the supplies that our growers use, by so doing save them an immense amount of money. We might say also that through our efforts and organization we have been able to distribute our products very satisfactorily. From this statement herewith you will note the average price received per package, and might say that before the organization of the Association that the only average price per package that the writer remembers, at present, was for his own individual connections, and that was on cabbage for 1914, which was only 85 cents in one instance, 80 cents in another, and 75 cents in another instance. Those were the average prices received on cabbage that year.

"Therefore, you see by the proper distribution through the organization that the average price of \$1.32 per package is quite an increase.

"We may mention that by reading our by-laws carefully you will notice that Article 10 explains in a sense the pooling system. In other words, principally all of the products shipped through the Association are pooled. By doing this the small shipper gets

the same advantage as the large shipper, providing, of course, products are of the same grade. For instance, should we sell one grower's products at \$2.00 per crate and another grower's for fancy make of stuff at \$2.25, and another grower's of inferior stuff, which only demands a price of \$1.75 and so on, the pooling system would be based on a \$2.00 price. Growers' products selling for less than \$2.00 they would be paid for their products in accordance with the price they sold at below \$2.00. Those selling above \$2.00 would be paid in accordance for the amount selling above \$2.00, thereby giving every one absolute justice. We find that by doing this materially helps the brand that the Association ships. In other words, it forces our growers to use their best efforts to put up their products in the best possible manner, thereby giving the products grown by the Association greater selling value, because the buyer, knowing the conditions under which the Association operates, knows full well that every package that he purchases from the Association will be put up properly or as near so as possible.

"It is our aim at all times to offer to the trade our best products, and should we have any products that are not what we term up to standard, these we generally consign and let them be sold on their own merit in some Eastern market.

"The brand of the Association is as shown on our letter head. This trade mark is copyrighted, and to show you the advantage of a trade mark beg to advise that last season, in one instance, we had a buyer in Pittsburgh purchase two cars of potatoes from us. One grower used the Association brand and the other did not. The one that did not use the Association brand had the best car of potatoes and when the cars arrived in Pittsburgh the buyer immediately wired us that the car not branded was inferior stock and wanted a deduction. Of course, knowing differently, we would not allow any deductions and had the car inspected and wired the purchaser to this effect. He accepted the car and we heard nothing further. Therefore, you see by using this brand that it creates a demand without inspection. In other words, the consumer will purchase our products branded without inspection, and without being branded it demands inspection."

The following is the statement for the season ending September 30, 1916, which is referred to in the report:

|                                      | Number<br>Packages. | Amount.             | Average<br>Obtained. |
|--------------------------------------|---------------------|---------------------|----------------------|
| F. O. B. Sales.....                  | 185,306             | \$286,605 27        | \$1 54               |
| Consigned goods.....                 | 245,104             | 370,407 78          | 1 51                 |
| <b>Total .....</b>                   | <b>430,410</b>      | <b>\$657,013 05</b> | <b>\$1 52</b>        |
| Cabbage .....                        | 239,155             | \$316,418 99        | \$1 32               |
| Beets and carrots.....               | 9,644               | 28,371 00           | 2 95                 |
| Potatoes, includes three grades..... | 64,708              | 216,737 27          | 3 35                 |
| Cucumbers .....                      | 65,342              | 53,642 14           | 82                   |
| Beans .....                          | 38,696              | 28,383 89           | 73                   |
| Corn .....                           | 741                 | 501 33              | 70                   |
| Squash .....                         | 179                 | 71 64               | 40                   |
| Cotton seed.....                     | 8*                  | 273 86              | 39 00                |
| Peas .....                           | 949                 | 1,101 42            | 1 20                 |
| Sweet potatoes.....                  | 275                 | 98 53               | 36                   |
| Lettuce .....                        | 5,748               | 6,714 51            | 1 16                 |
| Turnips .....                        | 4,965               | 4,698 47            | 94                   |
| Beans sold f. o. b.....              | 24,695              | \$16,874 68         | \$0 69               |
| Beans consigned.....                 | 14,001              | 11,509 21           | 82                   |
| Cabbage sold f. o. b.....            | 123,237             | 171,621 29          | 1 39                 |
| Cabbage consigned.....               | 115,918             | 144,797 79          | 1 25                 |
| Cukes sold f. o. b.....              | 12,773              | 16,175 24           | 1 26                 |
| Cukes consigned.....                 | 52,569              | 37,466 90           | 71                   |
| Potatoes sold f. o. b.....           | 19,244              | 77,134 84           | 4 00                 |
| Potatoes consigned.....              | 43,464              | 139,602 43          | 3 21                 |

\*Tons.

|   | Packages.     | Amount.             |
|---|---------------|---------------------|
| Season ending September 30th, 1916..... | 430,410       | \$657,013 05        |
| Season ending September 30th, 1915..... | 386,216       | 512,435 02          |
| <b>Gain 1916 over 1915.....</b>         | <b>44,194</b> | <b>\$144,578 03</b> |
| Number of cars shipped by A. C. L.....  |               | 2,273               |
| Number of cars shipped by Southern..... |               | 307                 |
| Number of cars shipped by S. A. L.....  |               | 19                  |
| <b>Total cars shipped 1916.....</b>     |               | <b>2,599</b>        |
| <b>Total cars shipped 1915.....</b>     |               | <b>2,370</b>        |
| <b>Gain 1916 over 1915, cars.....</b>   |               | <b>229</b>          |

**ASPARAGUS ON THE RIDGE.**

During the year the South Carolina Asparagus Growers' Association was formed with J. J. Jones, of Ridge Spring, as secretary-treasurer. The asparagus growing industry has begun to develop rapidly, particularly in the section around Ridge Spring. It is stated that during the past season some 44 carloads of high grade asparagus, worth some \$3,000.00 per car, were shipped to the Eastern markets from the Ridge district alone. This brought to the growers \$132,000.00.

A substantial growth of the industry in the section is indicated.

**THE GREEN SOLDIER BUG.**

Toward the end of the cotton season the Department received reports of a peculiar insect which had appeared in the cotton fields of Barnwell County, and had proven very destructive. By request, Col. R. M. Mixson, of Williston, sent in specimens of the



insect, and they were sent to the United States Bureau of Entomology for identification.

The brief report of Philip Luginbill, Division of Cereal and Insect Investigations, is as follows, and it is made public in order that those whose fields may be infested may know how to deal with the pest:

"The insect brought over belongs to the class known as stink bugs or 'pumpkin bugs.' They attack many other plants besides cotton and sometimes breed up in large numbers in a given locality so as to cause harm, though often, as I suspect, as in this case, cause more of an alarm than harm.

"This is quite a different insect from the boll weevil. The eggs are placed upon the leaves, and upon hatching give forth small nymphs. These resemble the parent bug very closely and feed in the same manner, and that is by piercing the bolls (in the case of cotton) with their beaks and extracting the juices from them. Black spots appear where bolls are punctured and rotting may set in.

"This species is probably *Nezara hiliaris*, 'Green Soldier Bug.'

"As to means of control I fear little can be done, now—except the bugs might be picked by hand—that is with bucket and paddle. However, the next year's crop can be safeguarded by gathering together all trash and rubbish in infected areas and burning it. This does away with the winter quarters and will cause them to seek other regions or perish."

#### SOIL SURVEYS.

During the year the United States Bureau of Soils completed soil surveys and maps of the Counties of Florence and Dorchester, and the printed copies and maps are now available.

#### BOLL WEEVIL COTTONS.

During this year the Georgia State Board of Entomology made variety tests of 25 plants each of well known varieties of cotton grown under extreme boll weevil conditions. The tests ran from June 15 to August 1, 1916. The Board has kindly furnished the following report of the results:

**FRUIT TEST.**

| Variety.                | Blooms.             | Fruit Set.        | Per Cent.<br>Fruit Set. |
|-------------------------|---------------------|-------------------|-------------------------|
| 1. Express .....        | 1,149               | 379               | 32                      |
| 2. Dixie Improved ..... | 819                 | 281               | 34                      |
| 3. Cleveland .....      | 741 $\frac{1}{2}$   | 248 $\frac{1}{2}$ | 33                      |
| 4. Dix-Affia .....      | 903 $\frac{1}{2}$   | 254               | 28                      |
| 5. Toole .....          | 1,000 $\frac{1}{2}$ | 217 $\frac{1}{2}$ | 21                      |
| 6. Lewis 66 .....       | 879                 | 236 $\frac{1}{2}$ | 26                      |
| 7. Cook .....           | 669 $\frac{1}{2}$   | 186               | 28                      |
| 8. Simpkins .....       | 898                 | 200               | 22                      |
| 9. Lewis 63 .....       | 841                 | 236 $\frac{1}{2}$ | 28                      |
| 10. Triumph .....       | 721                 | 212 $\frac{1}{2}$ | 29                      |
| 11. Council Toole ..... | 986                 | 331 $\frac{1}{2}$ | 33                      |

**FERTILIZER TEST.**

Count of blooms from June 15th to August 1st on 25 stalks each, under average conditions, fruit counted on August 24th :

|   | Blooms. | Fruit Set. | Wt. Per Blk. |
|---|---------|------------|--------------|
| 1. 400 lbs. acid phos. between peanuts .....                              | 355     | 101        | 71           |
| 2. 3 tons stable manure .....   | 789     | 171        | 173          |
| 3. 3 tons stable manure and 900 lbs. rock phos.<br>mixed in furrows ..... | 503     | 140        | 110          |
| 4. 400 lbs. acid phos. ....   | 435     | 120        | 58           |
| 5. 3 tons stable manure, 400 lbs. acid phos. ....                         | 547     | 160        | 163          |
| 6. 200 lbs. C. S. meal and 800 lbs. rock phos. ....                       | 564     | 170        | 77           |
| 7. 300 lbs. C. S. meal and 300 lbs. acid phos. ....                       | 569     | 174        | 142          |
| 8. 600 lbs. 9-2-2 $\frac{1}{2}$ fert. ....                                | 604     | 175        | 127          |
| 9. 3 $\frac{1}{2}$ tons rock phos. and stable manure .....                | 717     | 166        | 153          |
| 10. Check .....   | 296     | 108        | 38           |

**FORWARD STEP BY A BANK.**

Organized April 1, 1916, the Agricultural Department of the Citizens' Bank, of Charleston, with Mr. W. McLeod Frampton, the secretary, conducting its affairs, has carried on a more extensive work in assisting the farmers of this section than would have been warranted ordinarily in the first nine months of any such organization, which is an innovation in any place or part of the country. Mr. C. R. I. Brown, president of the Citizens' Bank, is chairman of the department. With untiring efforts and energy, both of these men have been pushing the department forward at a rapid rate, until after nine months of institution, it may be considered a success from every standpoint. Neither time nor money have been spared by the bank in bringing its agricultural department to the fore. The Citizens' Bank is justly proud of itself, not only in view of the fact that it is the only bank in the State of South Carolina which has an agricultural department, and is only one of a few in the South, but also because of the excellent account of itself given by the department during the early months of its primal institution as a part of the bank.

## II.—LIVE STOCK.

The time has come now when South Carolina must turn to live stock and establish a substantial live stock industry, and in order to do so, forage crops must become the order of the day, and the best forage crops are impossible without life and bacteria in the soil.

The first packing house is now being built at Orangeburg by the public-spirited people of Orangeburg and adjacent counties, and another is projected for Greenville.

It will be seen from the summary in this report that the whole agricultural situation has been based on cotton, corn and tobacco, in so far as actual money values are concerned. When it came to wheat, hay and forage, including alfalfa and the clovers, although South Carolina outranks the whole United States in the matter of cowpeas, there has been but little doing; in fact, practically nothing. In Irish potato growing the State is hardly considered, and even now only 65,000 acres are devoted to sweet potatoes. In the matter of live stock sold and slaughtered on farms, and live stock products, the State ranks thirtieth among the States of the Union. So few mules and horses are raised that they do not appear in the statistics. In the matter of the number of hogs the State is way down at twenty-sixth place, and the number of sheep is so small that it is not even taken into consideration. From these last figures it will be easily seen that our agriculture is a one-sided agriculture; and the indispensable adjuncts of live stock and food and feed for man and beast do not enter the proposition to such an extent as to command even attention. And the history of the world has shown that no agricultural industry can thrive and produce the maximum of profit without live stock and without raising food stuffs on the farm to supply the needs of animal and human workers.

With talk all over the State of the live stock industry, it should be borne in mind that we cannot establish a live stock industry on hay and mixed feeds, brought across the continent, in many instances, and sold at from \$20 to \$40 per ton to the farmers. If we are to have a live stock industry it must be built on home grown forage crops. On grass—something that two-thirds of us

have spent most of our time fighting, and South Carolina grows Bermuda grass anywhere. And it is a stronger hay proposition than any Western timothy. No man can afford to raise cattle or hogs and sell them at less than it costs him to produce them.

#### LIVE STOCK STATISTICS.

In order that the live stock situation may be better understood, the following figures for January 1, 1917, from the Federal Government estimates may be given:

##### HORSES.

|           | Number. | Value | Per Head. | Total Value. |
|-----------|---------|-------|-----------|--------------|
| 1917..... | 85,000  | \$136 |           | \$11,560,000 |
| 1916..... | 84,000  | 135   |           | 11,340,000   |
| 1915..... | 83,000  | 131   |           | 10,873,000   |
| 1914..... | 85,000  | 144   |           | 12,240,000   |
| 1913..... | 83,000  | 140   |           | 11,620,000   |
| 1912..... | 82,000  | 135   |           | 11,070,000   |
| 1911..... | 80,000  | 138   |           | 11,040,000   |
| 1910..... | 80,000  | 127   |           | 10,160,000   |

##### MULES.

|           | Number. | Value | Per Head. | Total Value. |
|-----------|---------|-------|-----------|--------------|
| 1917..... | 174,000 | \$162 |           | \$28,188,000 |
| 1916..... | 171,000 | 161   |           | 27,531,000   |
| 1915..... | 166,000 | 149   |           | 24,734,000   |
| 1914..... | 171,000 | 167   |           | 28,557,000   |
| 1913..... | 168,000 | 171   |           | 28,928,000   |
| 1912..... | 166,000 | 165   |           | 27,390,000   |
| 1911..... | 164,000 | 173   |           | 28,372,000   |
| 1910..... | 156,000 | 158   |           | 24,648,000   |

##### MILCH COWS.

|           | Number. | Value   | Per Head. | Total Value. |
|-----------|---------|---------|-----------|--------------|
| 1917..... | 189,000 | \$40.00 |           | \$7,560,000  |
| 1916..... | 189,000 | 34.50   |           | 6,520,500    |
| 1915..... | 185,000 | 33.00   |           | 6,100,000    |
| 1914..... | 185,000 | 34.20   |           | 6,327,000    |
| 1913..... | 185,000 | 32.50   |           | 6,012,500    |
| 1912..... | 185,000 | 32.30   |           | 5,975,500    |
| 1911..... | 175,000 | 31.50   |           | 5,827,500    |
| 1910..... | 181,000 | 28.90   |           | 5,230,900    |

##### OTHER CATTLE.

|           | Number. | Value   | Per Head. | Total Value. |
|-----------|---------|---------|-----------|--------------|
| 1917..... | 215,000 | \$18.30 |           | \$3,934,000  |
| 1916..... | 215,000 | 15.40   |           | 3,311,000    |
| 1915..... | 211,000 | 14.60   |           | 3,080,600    |
| 1914..... | 211,000 | 14.90   |           | 3,143,900    |
| 1913..... | 215,000 | 14.20   |           | 3,053,000    |
| 1912..... | 215,000 | 13.20   |           | 2,838,000    |
| 1911..... | 215,000 | 13.00   |           | 2,795,000    |
| 1910..... | 209,000 | 12.00   |           | 2,508,000    |

##### SHEEP.

|           | Number. | Value  | Per Head. | Total Value. |
|-----------|---------|--------|-----------|--------------|
| 1917..... | 30,000  | \$3.20 |           | \$96,000     |
| 1916..... | 30,000  | 2.70   |           | 81,000       |
| 1915..... | 32,000  | 2.60   |           | 83,200       |
| 1914..... | 33,000  | 2.60   |           | 85,800       |
| 1913..... | 34,000  | 2.80   |           | 95,200       |
| 1912..... | 34,000  | 2.80   |           | 95,200       |
| 1911..... | 34,000  | 2.80   |           | 95,200       |
| 1910..... | 38,000  | 2.40   |           | 91,200       |

**SWINE.**

|           | Number. | Value Per Head. | Total Value. |
|-----------|---------|-----------------|--------------|
| 1917..... | 928,000 | \$7.97          | \$7,400,000  |
| 1916..... | 817,000 | 8.50            | 7,395,000    |
| 1915..... | 819,000 | 8.60            | 7,043,400    |
| 1914..... | 780,000 | 9.10            | 7,098,000    |
| 1913..... | 765,000 | 8.50            | 6,502,000    |
| 1912..... | 797,000 | 8.00            | 6,376,000    |
| 1911..... | 745,000 | 8.30            | 6,183,500    |
| 1910..... | 665,000 | 7.20            | 5,783,500    |

It will be noted with gratification that the largest increase has been made in the number of hogs.

**ABSTRACT OF LIVE STOCK RETURNED FOR TAXATION.**

It is an exceedingly interesting study to compare the above figures with the following abstract of the live stock returned for taxation in the State as obtained from the Comptroller General's books:

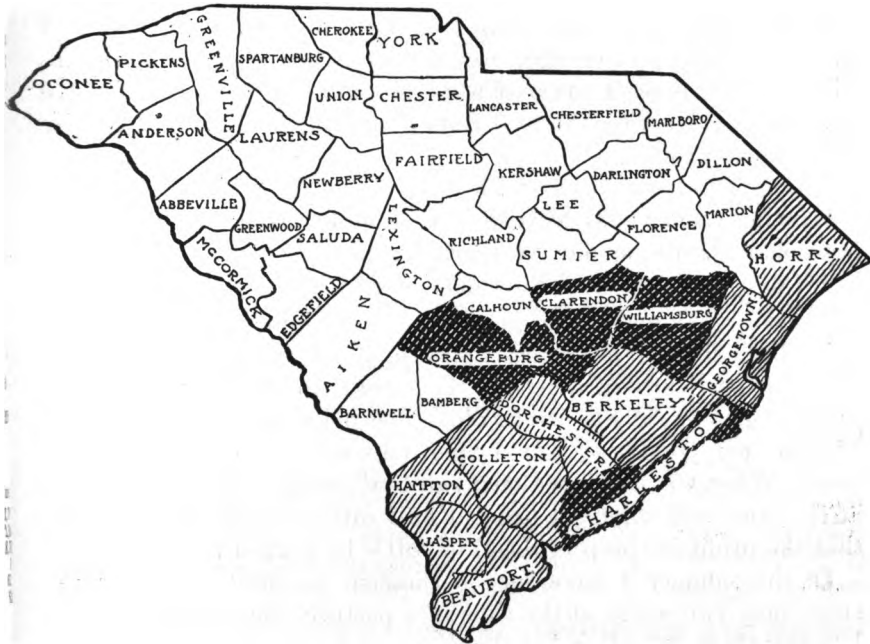
|                       | Number, 1915. | Value, 1915. | Number, 1916. | Value, 1916. |
|-----------------------|---------------|--------------|---------------|--------------|
| Horses .....          | 78,175        | \$3,844,534  | 75,334        | \$3,706,761  |
| Cattle .....          | 240,477       | 2,522,200    | 245,506       | 2,606,549    |
| Mules and Asses ..... | 162,415       | 8,787,547    | 163,240       | 8,785,409    |
| Sheep and Goats ..... | 31,766        | 33,976       | 32,952        | 33,732       |
| Hogs .....            | 206,470       | 548,925      | 236,490       | 612,757      |
| Dogs .....            | 93,789        | 606,248      | 97,868        | 638,703      |

**CATTLE TICK ERADICATION WORK.**

During this year as a result of the splendid work being done by Dr. W. K. Lewis and his corps under the combined Federal and State appropriations, three more counties—Edgefield, Bamberg and Barnwell—were freed from the cattle tick, and on September 15, 1916, were released from quarantine. This leaves only twelve counties still to be released, all of them save Orangeburg being in the coastal plain. In half of these work is being conducted on approved lines, and in the other on preliminary lines.

The United States Department of Agriculture, in a recent report on tick eradication work, said:

"An outline of conditions in the tick-infested territory, recently prepared, shows that Virginia, only four counties in which are now under quarantine, can be made tick free by one year's active work, and that, because of the interest now being shown there, the quarantine is likely to be removed from the last bit of previously tick-infested territory in the State early in 1918. South Carolina, which is pushing the eradication work steadily forward, should achieve freedom from ticks the same year. By the end of 1917, it is calculated, there should be but fifteen counties in Alabama remaining in quarantine, and these, at the rate the State has been working, should be cleaned up the following year."



White—Released from quarantine. Light Shading—Quarantine, preliminary work. Dark Shading—Systematic work.

#### THE SHEEP INDUSTRY.

Great efforts are now being made to re-establish the sheep growing industry in all parts of the United States, and to this end a National Sheep Conference was held in Philadelphia in the fall, where an intelligently directed movement to this end was inaugurated. The facts and the opportunities have been furnished by the Department to the people of the State.

That sheep for mutton and for wool can be successfully raised in this State, the following from H. C. Hahn, the Highland Farm, Aiken, is of special interest:

Dear Sir—In answer to your inquiry regarding sheep raising, would say that I started twelve years ago buying some fairly good grade native ewes; every few years I buy a buck, to keep from inbreeding, my foundation stock being mostly Southdown. I am crossing them with the Shropshire bucks. By this method my flock improves regularly, so much so that Mr. Cotton, of the Department of Agriculture at Washington, pronounced my flock the best he had seen south of Washington.

At first my flock only clipped on the average  $3\frac{1}{2}$  pounds of wool; now the clip averages over 6 pounds per head per annum, which, at the present price of wool, is quite an item. I estimate that my wool pays for the feed I am giving my flock, counting the lambs clear profit.

I am turning my bucks with ewes about the middle of June, separating them again November 1, so as to breed for early—or hot-house—lambs, as our Northern friends call them. My lambs begin to come the last of November or first of December.

I find a ready market for my lambs when eight or twelve weeks old, selling them to our tourists and the hotels in this section who cater to the Northern tourists. The lambs weigh from 20 to 30 pounds, dressed, at  $8\frac{1}{2}$  weeks old. The price ranges from 30 to 40 cents per pound, so that a lamb nets me from \$8 to \$12 per head. When you consider that I can feed five to six head of sheep at the same cost what one head of beef cattle would cost, you see that the profit in sheep is ahead of cattle by a good margin.

In the summer I have four permanent pastures, leaving the sheep only two weeks at the time in a pasture, then change them, keeping them out of each pasture about four weeks or more as a preventative of stomach worms and other parasites. By this method I keep my flock healthy. The pastures consist mainly of Bermuda grass and some other native grass and some Lespedeza. I do not house the flock in the summer, but about the middle of November, when pastures get short and weather bad, I drive them in their lot with open sheds, feed them some pea hay, alfalfa or any roughage I may have, and a small amount of bran; sometimes a little oats or corn. During the winter days they are turned out on the cultivated fields to graze on cover crops, such as different kinds of grains, vetches, clovers and rape. In connection with grazing the fields they are the best manure spreaders, beating any patent machine made by man. They also are a great weed destroyer, both in pastures and fields. Have never lost any from dogs. I increase my flock from the earliest dropped ewe lambs, as the lambs that come later in spring are more subject to the parasites and never amount to anything, so I always butcher the later lambs as soon as large enough, and before they are weaned. Every farm, especially those with a lot of rolling wash-land, should have a flock of sheep.

Have sold over \$1,800 worth of live stock off my farm this year.

Yours for better farming, and more of it.

### III.—FARM MANAGEMENT.

Within the calendar year of 1916 the Office of Farm Management, United States Department of Agriculture, in South Carolina, has completed the compilations and prepared for publication the data secured in the farm management survey previously made of 112 farms in Anderson County, South Carolina. A survey has also been made of 260 farms in Orangeburg County, and this data is being compiled and prepared for publication.

These surveys show the cost of producing the important crops and the annual cost of keeping live stock, and in Orangeburg County the cost of producing hogs. They also show the per cent return made on the investment, the gross and net income per farm, the profits made, and many other things that are of economic importance in the management of farms. The data obtained in the surveys goes very much into detail, and the efficient methods of farming can be determined. The ultimate object of the work is to determine from a managerial point of view economic ways of making farms more profitable.

The three most vital influences on the profits are: First, the combination of enterprises; second, the yields, and third, in South Carolina, the acres of crops grown per mule. There are many other details connected with the management of farms that determine its profitability, but, comparatively speaking, they are of less importance, or the farmers lose less by them through mistakes or poor management than they do in the three main points.

If farmers adjust and manage their farms so as to have a good combination of enterprises, good yields and the proper amount of work per plow, there is a high probability of the farm being successful. In determining the combination of enterprises, the adaptability of the territory in the way of soil, climate and economic conditions is of the first consideration. After this it becomes a question of including, not only the most profitable enterprise, but the combination of enterprises, each with the magnitude that will make the farm as a whole the most profitable. A crop may be profitable when grown for home consumption, but when grown for the world's market it becomes unprofitable. A product grown and used on the farm is worth the retail price to the farmer, but when sold in the world's market it can command only a whole-



sale price. The retail price is often above the cost price, and the wholesale price below it, which consequently makes it profitable for home use but not for selling purposes. This accounts for the fact that on many farms in South Carolina corn is profitable when grown for home use, but not when sold in the wholesale market. Many other crops, and sometimes live stock, are profitable when grown for the farm, but unprofitable when grown for the market. Some crops can also be grown when the labor and equipment is not employed on the major crop. It is profitable to utilize this labor and equipment on some minor crop, even though it earns only small returns. Each farm is a problem by itself, and must be handled accordingly, but these surveys show how the enterprises can be grouped and each given such weight as to make the farms as a whole most profitable.

These surveys also show how yields can be most profitably increased by growing legumes, fertilization, the use of good varieties of seed, etc. Farmers are deeply interested in the amount of fertilizer to apply. The most profitable amount for the farm and for each crop is determined in such a way that the farmer who follows the recommendations will not make serious mistakes.

The acres to grow per mule seems a simple matter, but farms vary widely in their practice, and many lose in profits thereby because of the wrong acreage. Farms that have too small an acreage do not get the maximum return for the amount of labor and equipment employed, while farms with too large an acreage do not handle the crop profitably, and lose in yields and profits. These surveys show the most profitable acreage to grow per mule, and also in general terms the acres of the various crops that are most profitable per mule.

No other investigations have given agriculturists such an insight into the economic conditions and the managerial methods required to make a farm profitable as have these economic surveys. They will be followed by studies of special problems which will make it possible to determine even more accurately the organization and management required to make the individual farms the most profitable. The work of the Office is changing as the science of farm management and agricultural economics develop, but in its investigations it is holding to the ultimate purpose of finding out how to make farming pay.

#### IV.—THE COTTON CROP.

The miracle of 20 cents cotton has happened. This year's crop which promises to be 952,080 bales against 1,174,213 last year has sold for an average of 19.7 cents per pound, and with the seed has brought on the market \$104,585,000.00 as against \$81,960,000.00 in 1915. I shall not burden this report with the details of the recovery.

We have made great headway in the matter of preparedness against the future in the economic marketing of our cotton by the recognition of cotton as a basis of credit rather than a commodity. Cotton must ever be, and as I have shown elsewhere, is now and has been all the time the major money crop of the South Atlantic, and particularly of our own State, but the man who grows the cotton can never and will never get prosperity out of it when he confines his attention to it alone. He must fortify it with other crops, making it, now more than ever with the boll weevil at hand, the big heavy center of his football team, and that team, composed of merchants, bankers, business men and newspaper men, and everybody else, must rally to the center whenever he is hard pressed. In a one-crop system cotton must often be raised at less than the cost of production, and when that happens the man who raises it must suffer. But, in what I have said I have endeavored to impress the fundamental fact that we have gone as far as we can in raising cotton by artificial means and have brought about a soil depletion situation that demands that the sick patient shall be taken to the hospital forthwith; that tonicking of the sick man can no longer stimulate him to do a full man's work, and that we must get at the source of the trouble and effect a cure that will be lasting.

I have tried to show that cotton and abuse and misuse of fertilizer will mean the death of the patient, but on the other hand if we treat the patient properly we can produce a bale of cotton to the acre, produce everything that man and beast need, restore the soil to its native fertility and enthrone prosperity where poverty, illiteracy and economic ignorance form the present ruling triumvirate. Incidentally such members of the ruling court as the

supply merchant system, excessive rates of interest, and too many middlemen must be eliminated.

#### THE 1915 CROP.

The total crop in the cotton belt in 1915 turned out to be 11,-068,173 running bales, equivalent to 11,191,820 500-pound bales.

The State of South Carolina rose in rank to the third largest cotton producing State.

The following summary shows the condensed comparative figures as to the State's crop for the past six years:

| Growth year. | Cotton Produced (Exclusive of Linters).      |                             |           |                |           |        |           |
|--------------|--|-----------------------------|-----------|----------------|-----------|--------|-----------|
|              | Running bales; counting round as half bales. | Equivalent 500-pound bales. |           | Running bales. |           |        |           |
|              |  | Gross.                      | Net.      | Total.         | Upland.   |        | Sea-land. |
|              |  |                             |           |                | Square.   | Round. |           |
| 1915 .....   | 1,174,215                                    | 1,138,919                   | 1,182,402 | 1,174,213      | 1,168,665 | .....  | 6,178     |
| 1914 .....   | 1,560,195                                    | 1,533,810                   | 1,465,295 | 1,560,195      | 1,554,598 | .....  | 5,597     |
| 1913 .....   | 1,418,704                                    | 1,377,814                   | 1,315,599 | 1,418,704      | 1,410,033 | .....  | 8,671     |
| 1912 .....   | 1,224,245                                    | 1,182,128                   | 1,128,446 | 1,224,245      | 1,216,538 | .....  | 7,707     |
| 1911 .....   | 1,692,146                                    | 1,648,712                   | 1,574,379 | 1,692,146      | 1,687,027 | .....  | 5,119     |
| 1910 .....   | 1,210,968                                    | 1,168,501                   | 1,110,530 | 1,210,968      | 1,197,962 | .....  | 18,016    |

| Growth year. | Per cent. of total ginned. | Rank in production. | Linters.       |                             |        |      |
|--------------|----------------------------|---------------------|----------------|-----------------------------|--------|------|
|              |                            |                     | Running bales. | Equivalent 500-pound bales. |        | Net. |
|              |                            |                     |                | Gross.                      | Net.   |      |
| 1915 .....   | 10.1                       | 8                   | 70,923         | 67,785                      | 64,665 |      |
| 1914 .....   | 9.5                        | 4                   | 58,416         | 57,343                      | 54,673 |      |
| 1913 .....   | 9.7                        | 4                   | 46,580         | 45,016                      | 42,968 |      |
| 1912 .....   | 8.6                        | 4                   | 35,517         | 34,181                      | 32,509 |      |
| 1911 .....   | 10.5                       | 4                   | 36,969         | 35,884                      | 33,757 |      |
| 1910 .....   | 10.0                       | 5                   | 29,572         | 28,428                      | 27,127 |      |

The average weight of bale in this State in 1915 was 482.8 pounds, against 492.1 the preceding year.

#### AVERAGE PRICES FOR COTTON AND THE SEED.

The average prices per pound obtained during the past six years for cotton, and per ton for cotton seed have been as follows:

|            | Cotton<br>(per pound) | Cotton Seed<br>(per ton) |
|------------|-----------------------|--------------------------|
| 1910 ..... | 14.02c.               | \$28.50                  |
| 1911 ..... | 9.48c.                | 17.20                    |
| 1912 ..... | 11.70c.               | 21.20                    |
| 1913 ..... | 12.86c.               | 25.70                    |
| 1914 ..... | 7.76c.                | 20.80                    |
| 1915 ..... | 11.21c.               | 36.50                    |

This season the price of cotton has generally hovered around 19 cents, and seed went to higher figures than ever known, about \$40.00.

#### WHAT THE COTTON CROP SOLD FOR.

The following shows what the 1915 crop sold for, with the seed, as compared to the five years preceding:

| Growth year. | Aggregate value of cotton crop | Lint Cotton—Gross Weight. |               |                  |                 |                   | Cotton Seed.     |              |
|--------------|--------------------------------|---------------------------|---------------|------------------|-----------------|-------------------|------------------|--------------|
|              |                                | Total value.              | Total Pounds. | Upland.          |                 | Sea island bales. | Quantity (tons.) | Value.       |
|              |                                |                           |               | In square bales. | In round bales. |                   |                  |              |
| 1915 ..      | \$81,980,000                   | \$63,560,000              | 566,960,000   | 564,800,000      | .....           | 2,160,000         | 504,000          | \$18,400,000 |
| 1914 ..      | 73,700,000                     | 59,510,000                | 766,900,000   | 764,880,000      | .....           | 2,020,000         | 682,000          | 14,190,000   |
| 1913 ..      | 104,340,000                    | 88,590,000                | 688,910,000   | 686,820,000      | .....           | 3,080,000         | 613,000          | 15,750,000   |
| 1912 ..      | 80,200,000                     | 69,150,000                | 591,000,000   | 589,370,000      | .....           | 2,690,000         | 528,000          | 11,150,000   |
| 1911 ..      | 90,740,000                     | 78,150,000                | 824,800,000   | 822,560,000      | .....           | 1,800,000         | 732,000          | 12,590,000   |
| 1910 ..      | 96,230,000                     | 81,560,000                | 681,750,000   | 577,080,000      | .....           | 4,670,000         | 518,000          | 14,760,000   |

#### THE SEA ISLAND CROP.

The sea island crop statistics for 1915 are as follows:

| Growth year. | Production.     |                              | Average gross weight of bale (pounds). |
|--------------|-----------------|------------------------------|--|
|              | Bales (number). | Total gross weight (pounds). |  |
| 1915 .....   | 8,178           | 2,166,000                    | 350.3                                  |
| 1914 .....   | 8,597           | 2,020,000                    | 361.3                                  |
| 1913 .....   | 8,671           | 3,080,000                    | 356.7                                  |
| 1912 .....   | 7,707           | 2,690,000                    | 348.7                                  |
| 1911 .....   | 5,119           | 1,800,000                    | 350.6                                  |
| 1910 .....   | 13,016          | 4,670,000                    | 358.8                                  |

#### YIELD PER ACRE IN 1915.

The yield of lint per acre of cotton in 1915 was 232 pounds, against 255 in 1914.

## THE CROP BY COUNTIES.

| County.            | Ginneries   |       | Total Quantity Ginned.                          |           |           |           |           |
|--------------------|-------------|-------|---|-----------|-----------|-----------|-----------|
|                    | Ac-<br>tive | Idle  | Number of bales (counting round as half bales)— |           |           |           |           |
|                    | 1915        |       | 1915  | 1914      | 1913      | 1912      | 1911      |
| The State.....     | 3,069       | 332   | 1,174,213                                       | 1,560,196 | 1,418,704 | 1,224,245 | 1,692,146 |
| Abbeville .....    | 54          | 3     | 31,548  | 36,050    | 34,306    | 23,975    | 42,162    |
| Aiken .....        | 159         | 8     | 37,785  | 51,272    | 48,066    | 36,873    | 51,361    |
| Anderson .....     | 119         | 13    | 60,348  | 62,068    | 73,541    | 54,577    | 80,382    |
| Bamberg .....      | 53          | 15    | 16,843  | 29,907    | 27,841    | 19,932    | 23,019    |
| Barnwell .....     | 120         | 14    | 36,514  | 65,846    | 58,890    | 43,407    | 67,601    |
| Beaufort .....     | 24          | 7     | 4,845   | 9,251     | 8,165     | 5,920     | 7,040     |
| Berkeley .....     | 55          | 3     | 9,625   | 16,695    | 13,500    | 10,809    | 17,118    |
| Calhoun .....      | 81          | 11    | 21,290  | 33,913    | 27,900    | 22,231    | 31,730    |
| Charleston .....   | 80          | 9     | 10,323  | 17,918    | 15,880    | 11,686    | 11,586    |
| Cherokee .....     | 31          | 6     | 15,026  | 17,655    | 18,072    | 14,107    | 16,542    |
| Chester .....      | 79          | 7     | 30,220  | 35,829    | 32,275    | 31,212    | 36,012    |
| Chesterfield ..... | 84          | 5     | 30,083  | 38,459    | 33,076    | 31,864    | 36,418    |
| Clarendon .....    | 53          | 7     | 27,286  | 50,230    | 40,268    | 35,469    | 54,222    |
| Colleton .....     | 37          | 7     | 13,680  | 24,856    | 19,732    | 15,233    | 21,916    |
| Darlington .....   | 70          | 2     | 33,574  | 48,457    | 38,456    | 40,420    | 57,700    |
| Dillon .....       | 84          | 9     | 30,593  | 40,340    | 38,213    | 39,048    | 50,576    |
| Dorchester .....   | 32          | 8     | 11,451  | 18,895    | 16,061    | 13,528    | 19,295    |
| Edgefield .....    | 80          | 8     | 29,497  | 35,554    | 33,235    | 27,436    | 40,356    |
| Fairfield .....    | 80          | ..... | 23,338  | 26,012    | 26,349    | 26,462    | 32,486    |
| Florence .....     | 72          | 13    | 30,594  | 48,947    | 44,282    | 38,965    | 58,902    |
| Georgetown .....   | 9           | 1     | 2,506   | 5,432     | 3,866     | 3,157     | 5,985     |
| Greenville .....   | 31          | 11    | 44,685  | 49,932    | 44,722    | 34,585    | 54,442    |
| Greenwood .....    | 44          | 1     | 29,005  | 35,298    | 33,819    | 30,125    | 45,546    |
| Hampton .....      | 51          | 2     | 12,731  | 22,710    | 19,616    | 14,774    | 25,797    |
| Horry .....        | 31          | 5     | 7,972   | 13,306    | 10,390    | 10,259    | 16,164    |
| Jasper .....       | 15          | 5     | 3,212   | 6,681     | 6,196     | 5,142     | .....     |
| Kershaw .....      | 97          | 2     | 24,897  | 32,170    | 27,677    | 25,016    | 36,193    |
| Lancaster .....    | 75          | ..... | 22,879  | 27,553    | 25,640    | 26,144    | 31,137    |
| Laurens .....      | 73          | 22    | 39,918  | 42,406    | 45,384    | 35,638    | 54,696    |
| Lee .....          | 51          | 2     | 32,186  | 45,078    | 38,885    | 34,098    | 47,713    |
| Lexington .....    | 87          | 12    | 24,482  | 30,670    | 26,091    | 22,942    | 34,011    |
| Marion .....       | 36          | 6     | 13,762  | 17,544    | 17,390    | 13,439    | 29,436    |
| Marlboro .....     | 120         | 17    | 50,723  | 69,838    | 56,583    | 71,206    | 75,642    |
| Newberry .....     | 85          | ..... | 36,888  | 36,698    | 40,611    | 34,510    | 46,426    |
| Oconee .....       | 37          | 3     | 18,190  | 21,306    | 20,906    | 15,516    | 22,824    |
| Orangeburg .....   | 209         | 25    | 62,894  | 89,557    | 80,806    | 60,699    | 87,976    |
| Pickens .....      | 34          | 9     | 17,885  | 22,940    | 19,512    | 14,161    | 22,520    |
| Richland .....     | 61          | 13    | 19,939  | 27,148    | 22,679    | 21,172    | 22,613    |
| Saluda .....       | 54          | 12    | 25,898  | 27,051    | 26,064    | 23,551    | 30,470    |
| Spartanburg .....  | 101         | 9     | 69,302  | 75,564    | 73,396    | 57,811    | 78,145    |
| Sumter .....       | 82          | 1     | 31,600  | 54,278    | 41,155    | 34,426    | 50,613    |
| Union .....        | 40          | 11    | 18,501  | 20,564    | 20,724    | 17,529    | 23,029    |
| Williamsburg ..... | 56          | 4     | 22,171  | 36,644    | 26,577    | 23,894    | 38,701    |
| York .....         | 84          | 4     | 38,614  | 41,654    | 40,997    | 40,400    | 49,403    |

## THE 1916 CROP.

The following gives the running bales of cotton, exclusive of linters, ginned prior to December 13, crops of 1916 and 1915, in South Carolina :

| County.            | 1916.   | 1915.     | County.            | 1916.  | 1915.  |
|--------------------|---------|-----------|--------------------|--------|--------|
| Total .....        | 894,017 | 1,068,283 | Greenwood .....    | 28,018 | 26,674 |
| Abbeville .....    | 25,244  | 28,955    | Hampton .....      | 16,396 | 11,901 |
| Aiken .....        | 34,729  | 35,649    | Horry .....        | 4,508  | 7,547  |
| Anderson .....     | 51,836  | 56,433    | Jasper .....       | 4,946  | 8,108  |
| Bamberg .....      | 21,258  | 15,233    | Kershaw .....      | 10,673 | 23,252 |
| Barnwell .....     | 41,108  | 34,766    | Lancaster .....    | 13,447 | 20,388 |
| Beaufort .....     | 5,642   | 2,782     | Laurens .....      | 29,510 | 37,520 |
| Berkeley .....     | 4,923   | 9,230     | Lee .....          | 17,402 | 30,288 |
| Calhoun .....      | 20,396  | 18,211    | Lexington .....    | 22,867 | 22,715 |
| Charleston .....   | 4,414   | 8,533     | Marion .....       | 11,107 | 13,315 |
| Cherokee .....     | 8,360   | 13,956    | Marlboro .....     | 31,761 | 48,076 |
| Chester .....      | 18,954  | 29,524    | Newberry .....     | 29,031 | 34,685 |
| Chesterfield ..... | 17,554  | 27,015    | Oconee .....       | 16,238 | 16,751 |
| Clarendon .....    | 18,396  | 26,013    | Orangeburg .....   | 56,124 | 58,729 |
| Colleton .....     | 12,457  | 18,114    | Pickens .....      | 14,106 | 15,591 |
| Darlington .....   | 17,341  | 31,651    | Richland .....     | 16,402 | 19,311 |
| Dillon .....       | 22,170  | 29,061    | Saluda .....       | 25,173 | 24,541 |
| Dorchester .....   | 8,131   | 11,009    | Spartanburg .....  | 49,362 | 64,968 |
| Edgefield .....    | 28,758  | 27,869    | Sumter .....       | 24,683 | 29,941 |
| Fairfield .....    | 14,167  | 22,370    | Union .....        | 12,354 | 17,425 |
| Florence .....     | 17,572  | 29,376    | Williamsburg ..... | 11,940 | 21,459 |
| Georgetown .....   | 1,325   | 2,347     | York .....         | 21,676 | 35,444 |
| Greenville .....   | 31,668  | 40,592    |                    |        |        |

#### COTTON SEED IN 1916.

From August 1 to November 30, 1916, the oil mills of the State had received 155,504 tons of cotton seed from the 1916 crop, and during the same period crushed 111,711 tons, leaving on hand, on November 30, 44,538 tons.

## V.—INOCULATION, LIME AND FERTILIZER.

The result of the one-crop idea and the soil depletion process that we have been pursuing has been to cause an almost utter abandonment of the raising of food and food crops, and herein is found the reason why so many thousands of farmers in South Carolina are poor. In truth, our people are living today almost entirely out of tin cans and sacks with pretty labels on them, which come from all other portions of the United States, obtaining foods and feeds that can be raised on the farm in South Carolina at a less cost of production, in nine cases out of ten, than in the section from which they were shipped. This drain on the people of South Carolina annually for feed and food brought from the West amounts to \$110,000,000, a figure that is simply appalling. Almost every dollar of it could be kept at home. Couple this cost of living with an expenditure of \$31,000,000 in one year, or even \$15,000,000 for one element in the cost of production of the \$190,000,000 of products that we raise, and see why, when \$25.18 per acre is written on the credit side of the ledger opposite value of crops, it does not mean what it is supposed to mean.

Surely anybody can understand why it is for the last few years we have been trying to hammer these hard facts into the heads of all our people and get them started in the right direction. Time and again serious opposition has developed from those with personal interest at stake, as the result of the introduction of a proper system of agriculture and fertilization of the soil in this State, and, strange to say, this opposition has sometimes come from the least expected of sources. But the hour has struck, if we are to seize our opportunities, when we must realize that we have been mining our soil for 150 years, and that we must pull out of the rut and go back to first and fundamental principles of agriculture and of sane living.

No man can rob South Carolina of her matchless climate, and, once the natural soil is brought back to its God-given fertility and productive power, and economic production is restored—with this, coupled with that of climate, I honestly believe no section of America will compare, or begin to compare, with our South Atlantic seaboard.

If South Carolina is so far up the line in the matter of value of products per acre, then why is it that so many people are poor and the per capita wealth so low? Wherein lies the trouble? I make bold to answer the question by saying that, first and foremost, the trouble rests in the everlasting mining of the soil, bringing an ever-increasing soil depletion, coupled with the drifting into the one-crop idea. Is this true? I am no enemy of commercial fertilizer in its proper place. In the proper system of agriculture, mineral fertilizers are invaluable, but on the same acreage practically, in 1900, South Carolina paid out only \$4,494,410 for commercial fertilizers. By 1909 the expenditure for this one element of the cost of production on the same acreage, with practically no increasing yield, had reached the amazing sum of \$15,162,017, an increase of 237.3 per cent. In that year, in addition to the ordinary mineral fertilizer, cotton seed meal was used for this purpose, to supply nitrogen, to the extent of \$3,658,330. And that year the State of South Carolina was using, or rather mis-using and abusing, one-fifth of the commercial fertilizer bought and sold in the United States. The habit grew at tremendous strides, and in 1914 we had become so fertilizer-mad that we were using \$31,000,000 of the material to tonic the plant and stimulate and deplete a sick soil that had already been overstimulated to the extent of becoming sicker and sicker each year. In other words, when the European war came, in 1914, the people in this State were using nearly one-fourth, measured in money value, of all of the artificial stimulation for plant and soil being disposed of in the United States of America. This represented nearly a third of all the money that the cotton crop could bring at a reasonable price for one single element in the cost of production. When the bulk of the acreage is devoted to cotton, need I tell any one why people on the farms are poor, and why the handsome values per acre given above really represent but little? The truth of the matter is, the same acreage has been used over and over again to soil exhaustion crops taking the carbonate of lime that is vital to plant life and to bacterial life, and there has been a process, unconsciously, of continued soil depletion, requiring each succeeding year a larger and larger dosing of tonic to bring practically the same result. We have never yet undertaken to employ nature's methods of maintaining soil fertility, keeping humus in the soil, keeping the bacterial life active, and storing the soil with pure nitrogen from the air. Our farmers scarcely know the



proper and rational use of legumes and their part in the soil-building process; and the barnyard manure that comes from a proper live stock industry is an infinitesimal item in the proposition.

This is the situation that has made me go from one end of the State to the other, not fighting the proper use of commercial fertilizer in a rational system of agriculture, but awakening the people to the dire results to the soil and to themselves of the misuse and abuse of this material, has made me plead with them to turn to legumes, to turn to hay and forage, to turn to live stock and establish their farms upon a properly balanced basis, with cotton as a major crop, and with sufficient land devoted to those things that will make the farm self-sustaining, no matter what may happen to cotton. This is what has made me present this matter, as I am doing here, to leading fertilizer manufacturers, pointing to them the inevitable destruction of their industry, following the programme that was in full blast in 1914, and it is why the principal fertilizer manufacturer in the United States has put in a plant and opened up marl beds, with the purpose of restoring carbonate of lime to the weakened soil and undoing much of the damage that has been done. I shall not discuss fully here this vital problem of restoring the magnificent natural soils of South Carolina to a state of maintained fertility and maximum of productive power.

#### **INOCULATION.**

Of course the primal need of all South Carolina soils is lime. And then comes the restoration of bacterial life to the soil. Two years ago the General Assembly passed the Enabling Act, making it possible for the Department to contract with the Earp-Thomas Company for the supplying of bacteria for all legumes at 40 cents an acre, delivered to the farmer. In spite of the senseless opposition encountered in the first year, dealt with so fully in my last report, the farmers began to use the pure cultures with marked results. This year generous advice to farmers was spread to use soils from fields in which legumes had been grown at some time by field workers. In spite of this further effort to block full benefits to the farmers, the Department furnished cultures as follows:

|                                | Acres. |
|--------------------------------|--------|
| Alfalfa .....                  | 553    |
| Cow Peas .....                 | 2,928  |
| Lima Beans .....               | 3      |
| Japan Clover .....             | 27     |
| Peanuts .....                  | 223    |
| Soy Beans .....                | 114    |
| Velvet Beans .....             | 517    |
| Vetch .....                    | 696    |
| No. 1 Clovers .....            | 1,670  |
| No. 4 Cow Peas-Soy Beans ..... | 39     |
| No. 5 Peas and Beans .....     | 52     |
| Beggar Weed .....              | 1      |
| Grand Total .....              | 6,823  |

This was distributed by counties as follows:

|                    | Acres. |                    | Acres. |
|--------------------|--------|--------------------|--------|
| Abbeville .....    | 118    | Hampton .....      | 123    |
| Aiken .....        | 71     | Horry .....        | 106    |
| Anderson .....     | 103    | Jasper .....       | 3      |
| Bamberg .....      | 177    | Kershaw .....      | 55     |
| Barnwell .....     | 174    | Lancaster .....    | 79     |
| Beaufort .....     | 34     | Laurens .....      | 143    |
| Berkeley .....     | 37     | Lee .....          | 48     |
| Calhoun .....      | 120    | Lexington .....    | 286    |
| Charleston .....   | 969    | Marion .....       | 165    |
| Cherokee .....     | 57     | Marlboro .....     | 154    |
| Chester .....      | 174    | Newberry .....     | 107    |
| Chesterfield ..... | 140    | Oconee .....       | 64     |
| Clarendon .....    | 83     | Orangeburg .....   | 460    |
| Colleton .....     | 101    | Pickens .....      | 18     |
| Darlington .....   | 239    | Richland .....     | 613    |
| Dillon .....       | 45     | Saluda .....       | 57     |
| Dorchester .....   | 32     | Spartanburg .....  | 451    |
| Edgefield .....    | 54     | Sumter .....       | 146    |
| Fairfield .....    | 112    | Union .....        | 65     |
| Florence .....     | 95     | Williamsburg ..... | 89     |
| Georgetown .....   | 141    | York .....         | 175    |
| Greenville .....   | 73     | Total .....        | 6,823  |
| Greenwood .....    | 267    |                    |        |

#### QUALITY OF CULTURES.

The Department of Agriculture, late in the year, received from the Assistant Chief of the Bureau of Plant Industry, United States Department of Agriculture, Dr. Carl F. Kellerman, the noted soil bacteriologist, the official report of the test of the nitro-cultures for the inoculation of legumes supplied to the citizens of South Carolina through the South Carolina Department of Agriculture.

At the last session of Congress a large appropriation was made to the Federal Department of Agriculture to investigate all the commercial cultures of legume bacteria, and for the publication

of the findings for the benefit of the farmers of the United States.

Dr. Kellerman's report shows that the nitro-cultures of the South Carolina State Department of Agriculture rank 100 per cent., and that in numbers they show as high as 835,000,000 per cubic centimeter. There are 32 cubic centimeters to each "acre bottle." This gives, in the case of the soy (soja) bean culture, a grand total of billions—26 billions 720 millions of germs to each 40-cent bottle.

The cultures tested were regular stock cultures taken from the stock regularly carried in Columbia. The alfalfa, vetch, clover and cow pea cultures all were given the maximum rating of 100 per cent.

It did not require a Government laboratory test to tell me that our cultures were as good as the best, for the results from their practical use by practical farmers has already proved that, but it is some satisfaction to have from this highest authority the definite statement that there is nothing better than what we supply to South Carolina farmers. It also proves the wisdom of my action in awarding the contract for the supply of these cultures to the Earp-Thomas Farmogerm Company, the widely known breeders and manufacturers of legumes and other soil bacteria.

The report follows:

United States Department of Agriculture,  
Bureau of Plant Industry,  
(Soil Bacteriology and Plant Nutrition Investigations.)

Washington, D. C., November 20, 1916.

Col. E. J. Watson,

Commissioner South Carolina Department of Agriculture,  
Columbia, S. C.:

Dear Sir—Enclosed find a report of the results of tests made on a series of legume bacteria cultures from the South Carolina Department of Agriculture.

Very truly yours,

K. F. KELLERMAN,  
Physiologist in Charge.

| Strain.              | Medium | Organisms<br>per Cc. | Percent B.<br>radicicola. | Nodule<br>production. |
|----------------------|--------|----------------------|---------------------------|-----------------------|
| Alfalfa .....        | Agar   | 28,550,000           | 100                       | Plus.                 |
| Crimson clover ..... | Agar   | 49,600,000           | 100                       | Plus.                 |
| Cowpea .....         | Agar   | 3,935,000            | 100                       | Plus.                 |
| Soybean .....        | Agar   | 835,000,000          | 100                       | Plus.                 |
| Vetch .....          | Agar   | 398,050,000          | 100                       | Plus.                 |

### THE MARL BEDS OPENED.

Quite soon after the General Assembly at its last session passed the Act authorizing the Commissioner of Agriculture to contract with manufacturers of limestone or marl, the Charleston (S. C.) Mining and Manufacturing Company having proceeded to open its extensive marl beds on the Ashley River, at my instance, and having erected an expensive and extensive drying and pulverizing plant, I concluded a contract under the terms of the Act, which is on file in the Department and subject to general inspection, by which the Department undertook to handle the non-calcined, high-grade material at \$1.25 per ton to the farmers, 10 cents a ton being allowed out of this for the expenses of handling. This contract was to terminate on June 1, and be subject to renewal at that time. When the time for renewal came it was clear that the price had been too low, and the renewal was justly made on the basis of \$1.50 per ton.

On January 22, in writing me on the subject of the quality and price and the supply of the material, Mr. Morgan, President of the company, said in part:

"You can readily understand that at the price we name for this material, prepared in the way it is, our company cannot figure on any large profit. In fact, we did not go into the business with the idea of making any large profit, but to supply what we felt, after your various talks and suggestions to us, was a need in certain localities of your State. Our business, as you know, is primarily the fertilizer business, but anything that will benefit the farmers must of necessity benefit us. If a liberal application of this marl to the land improves the land and puts it in a condition to produce better crops, then we believe it will eventually encourage the farmer to use fertilizers abundantly and in the proper and scientific way.

"The price to the farmer is so low that we believe he could hardly get together woods mold or fence corner rakings at a less cost. It has been our endeavor to make the price so low that all could afford to give it a trial. While on this question of price, I would say that we will not change this price between now and the first of May, 1916, by which time we will have a better idea of what the actual cost in preparing this material is, and then we will make a price which we hope may be permanent for some time

to come, but always as low as it is possible to do it, leaving to us a very small margin of profit for operating expenses.

"This material differs, as you will see, very much from ordinary ground limestone. It carries a good percentage of phosphate of lime, or phosphoric acid, which we think will make it eminently beneficial to the eastern section of your State, and which we think will become very readily available when used in that territory where there is apparently a lot of acid soil.

"While the supply we can furnish this spring is, of necessity, very limited, if it is demonstrated that the farmers of your State need this material, we are prepared to put out any amount that may be required. As you know, we have enormous deposits of this marl, and the amount to be produced is only measured by the construction of additional plant capacity."

When the mining was entered upon, the search was entirely for lime carbonate, but it was quickly seen that a far more valuable product had been found, one rich in phosphate of lime as well, as will be seen from the following circular, and that the product carried an additional value:

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### SPECIAL INFORMATION.

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The Department of Agriculture, Commerce and Industries of the State of South Carolina recommends that two tons per acre of PHOSPHO-MARL be used on freshly broken soil, and HARROWED in. On growing crops, the same amount, the rains and subsequent cultivation carrying the PHOSPHO-MARL into the top-soil, where it should be.

PHOSPHO-MARL is kiln-dried and powdered to dust. It is natural phosphated agricultural lime, and is not caustic. It can be mixed in any quantity with any source of ammonia or phosphoric acid without detriment, but with marked advantage to the mixture.

Thirty-three analyses of this product, covering the period from January to November 9th, 1916, show the averages as follows:

|                                    |       |
|------------------------------------|-------|
| Calcium Carbonate, per cent.....   | 65.51 |
| Magnesium Carbonate, per cent..... | 3.12  |

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|                                     |       |
|-------------------------------------|-------|
| Total Lime Carbonate, per cent..... | 68.63 |
|-------------------------------------|-------|

|  |      |       |
|--|------|-------|
| (a) Bone Phosphate of Lime, per cent. .... | 8.99 | 8.99  |
| Total Lime Content, per cent. ....         |      | 77.62 |

- (a) Equal to 4.11 per cent. Phosphoric Acid; or the Phosphoric Acid in about 513 pounds of 16 per cent. Acid Phosphate.

Seven tons of PHOSPHO-MARL contain, therefore, one TON OF GROUND ROCK PHOSPHATE of 62.93 per cent. Bone Phosphate of Lime. The Phosphoric Acid of this product is made "available" in the soil through the decay of active organic matter (decayed humus) and the action of soil bacteria.

The lowest "total lime content" of all these analyses is (Calcium Carbonate, Magnesium Carbonate and Bone Phosphate of Lime added together) 69.34 per cent., and the highest is 88.78 per cent.

The lowest "lime carbonate content" is 59.25 per cent., and the highest 79.56 per cent.

As a rule the lower the lime carbonate content, the higher the bone phosphate of lime content. Bone phosphate of lime, per unit, is worth about four times as much as a unit of lime carbonate.

PHOSPHO-MARL is the most soluble of all the raw lime products marketed in South Carolina, and is immediately available for the neutralizing of soil acidity.

The above as to the composition of Phospho-Marl supersedes all information heretofore issued based on analyses as made to dates of issue. Analyses are regularly made, and should any change whatever in composition be shown as mining proceeds, the public will be promptly advised through succeeding circulars. The product is a natural product, however, and, thus far, has maintained uniformity as to composition.

E. J. WATSON,  
Commissioner.

#### SUMMARY OF ANALYSES.

All through the year, at regular intervals, careful analyses were made, and the following, compiled at the end of the year, shows the remarkable uniformity of the run of the product:

**PHOSPHO-MARL ANALYSES.**

| Date<br>1916.  |    | Carb.<br>of Lime. | Carb.<br>of Mag. | Bone<br>Phos. Lime. | Total<br>Lime. | P <sub>2</sub> O <sub>5</sub> |
|--|----|-------------------|------------------|---------------------|----------------|-------------------------------|
| January  | 13 | 56.47             | 3.78             | 12.90               | 73.15          | 5.91                          |
| "  | 13 | 57.13             | 2.12             | 10.09               | 69.34          | 4.62                          |
| "  | 14 | 57.58             | 5.31             | 13.33               | 76.22          | 6.10                          |
| "  | 19 | 62.53             | 2.47             | 13.26               | 78.26          | 6.07                          |
| "  | 22 | 63.46             | 3.82             | 11.06               | 78.34          | 5.06                          |
| "  | 22 | 68.01             | 6.57             | 9.37                | 84.95          | 4.29                          |
| "  | 23 | 76.68             | 2.28             | 9.22                | 88.78          | 4.22                          |
| "  | 21 | 65.92             | 4.21             | 9.84                | 79.97          | 4.50                          |
| "  | 25 | 65.20             | 3.07             | 9.68                | 77.95          | 4.43                          |
| "  | 26 | 59.49             | 2.37             | 10.65               | 72.51          | 4.87                          |
| "  | 26 | 59.45             | 5.91             | 10.29               | 75.65          | 4.71                          |
| "  | 26 | 75.43             | 1.16             | 9.33                | 85.92          | 4.27                          |
| February   | 1  | 76.44             | 1.88             | 9.70                | 88.02          | 4.44                          |
| "  | 1  | 53.59             | 6.16             | 12.51               | 72.26          | 5.73                          |
| "  | 3  | 57.65             | 3.12             | 11.17               | 71.94          | 5.11                          |
| March  | 4  | 76.37             | 1.08             | 6.01                | 84.46          | 2.75                          |
| "  | 4  | 69.21             | 4.36             | 1.09                | 74.66          | .50                           |
| "  | 4  | 67.45             | 4.16             | 2.22                | 73.83          | 1.02                          |
| "  | 4  | 68.93             | 1.08             | 9.62                | 79.63          | 4.43                          |
| "  | 30 | 59.35             | 1.79             | 10.01               | 71.15          | 4.58                          |
| April  | 4  | 65.97             | 1.84             | 9.97                | 77.78          | 4.56                          |
| "  | 15 | 67.58             | 1.72             | 8.52                | 77.82          | 3.90                          |
| "  | 20 | 66.28             | 1.77             | 10.00               | 78.05          | 4.58                          |
| Average of 23 analyses to<br>April 20th.....             |    | 65.05             | 3.16             | 9.56                | 77.85          | 4.38                          |
| Sept.  | 11 | 63.53             | 0.55             | 8.90                | 72.98          | 4.08                          |
| October  | 4  | 68.53             | 3.45             | 6.28                | 78.36          | 2.80                          |
| "  | 5  | 67.23             | 2.13             | 8.35                | 77.71          | 3.80                          |
| "  | 14 | 61.35             | 3.85             | 9.42                | 74.62          | 4.25                          |
| "  | 20 | 72.82             | 1.05             | 7.21                | 81.08          | 3.30                          |
| "  | 25 | 56.24             | 4.90             | 12.76               | 73.90          | 5.80                          |
| "  | 26 | 65.92             | 3.98             | 9.26                | 79.16          | 4.23                          |
| November   | 1  | 71.26             | 3.36             | 6.98                | 81.60          | 3.19                          |
| "  | 6  | 69.00             | 3.26             | 3.16                | 75.00          | 1.44                          |
| "  | 9  | 69.73             | 3.96             | 4.51                | 78.20          | 2.06                          |
| Dec'ber  | 12 | 73.29             | 3.10             | 7.00                | 83.39          | 3.26                          |
| Average of 11 analyses, from<br>Sept. 11 to Dec. 12..... |    | 67.17             | 3.05             | 7.62                | 77.82          | 3.47                          |
| Average of 34 analyses.....                              |    | 65.74             | 3.12             | 8.93                | 77.84          | 4.09                          |

**ONLY DIFFICULTY ENCOUNTERED.**

Late in the year the representatives of a ground limestone commercial annex of a big fertilizer manufacturing concern endeavored to discredit the State by putting into circulation false, misleading and doctored copies of alleged analyses, accompanied by false statements, but this quickly reacted upon being soundly denounced and exposed and the facts furnished. This I am glad to say is the only piece of such work that has been encountered in the effort to redeem the soil. I will be glad to hand to any one the evidence on file in this Department.

**RAILROAD RATES.**

As soon as I was notified by the Charleston (S. C.) Mining and Manufacturing Company, the producers of this product, that they were prepared to commence shipments, I addressed a communication to the State Railroad Commission, requesting that they

establish rates on the commodity. The Commission acted promptly, establishing minimum carload rates for the shorter lines, while sanctioning the somewhat lower mileage rates submitted for approval by the longer and relatively more important lines. The mileage rates are not uniform as to all of these lines, but the variations are not great enough to make them a serious issue. Under these tariffs, each road receives its own local mileage rate, and where shipments are made over two or more distinct companies, their locals are added in order to make a through rate. In some cases, notably with the Atlantic Coast Line, the Charleston & Western Carolina, the Columbia, Newberry & Laurens, and the Northwestern Railroad of South Carolina, continuous mileage is figured for the entire haul, which makes a saving of as much as \$9 per minimum car to the buyer.

In other cases, particularly near Charleston, on the Atlantic Coast Line, the delivered price of phospho-marl is now less than the freight alone on ground limestone shipments from points beyond South Carolina. No limestone is yet being mined and ground for agricultural purposes in South Carolina, but there is no limestone of which I have knowledge whose lime carbonate is as desirable as the lime carbonate of this marl.

#### **CHARACTER OF THE PRODUCT.**

The bone phosphate of lime of this naturally phosphatized agricultural lime is worth, on the basis of the cost of a ton of ground phosphate rock (containing 65 per cent. of bone phosphate of lime) from Tennessee, from 97 cents to \$1.10 per ton; and on the basis of the delivered price of the high-grade (pebble) ground phosphate rock from Florida (around \$11 per ton, in bulk), it is worth \$1.37½ per ton. This means that farmers in South Carolina, under the terms of the Act passed at the last session, and the contract between this Department and the Charleston (S. C.) Mining and Manufacturing Company, are obtaining, after allowing for the phosphorus value, as stated above, a ton of marl containing an average of 68.51 per cent. of lime carbonate for the low price of 12½ cents to 53 cents per ton, plus freight.

The present price of \$1.50 per ton, f. o. b. shipping point, is low for a kiln-dried, finely pulverized product, and the producing company would not be justified in continuing this price unless the farmers of South Carolina buy enough of it to keep the plant in practically continuous operation.



For several years the Commissioner has steadfastly advocated the use of ground lime by the farmers of the State, for nearly all of our soils, in common with those of the other Atlantic Coast States, are sour and lime deficient, for they were not originally formed from lime rocks; and the beneficial effect of liming our soils has been most noticeable, and highly profitable.

I have reason also to believe that the price at which this marl is sold to the citizens of the State has had a stabilizing influence on the price of ground limestone, for, notwithstanding the advances in the cost of coal, explosives and labor, the ground limestone companies have not raised their prices beyond those prevailing prior to August, 1914, except where a change has been made in the mechanical condition through finer grinding.

The Department will in a few days issue a complete bulletin dealing with the entire subject of "Lime in Agriculture."

#### THE TONNAGE.

The Department has sold and distributed up to the end of the year 6,321 tons, and the total paid therefor has been \$14,446.45.

#### COMMERCIAL FERTILIZER.

The following condensed summary of receipts by months at the State treasury for several seasons past for fertilizer tax at 25 cents per ton gives complete information as to the consumption of commercial fertilizers for the past four years:

|                 | 1913.        | 1914.        | 1915.        | 1916.        |
|-----------------|--------------|--------------|--------------|--------------|
| April .....     | \$ 11,601 87 | \$ 15,853 50 | \$ 26,444 41 | \$ 13,390 43 |
| May .....       | 4,182 72     | 5,147 20     | 2,022 29     | 1,423 60     |
| June .....      | 3,588 40     | 3,778 40     | 2,265 95     | 4,227 55     |
| July .....      | 2,557 60     | 2,060 00     | 710 45       | 608 26       |
| August .....    | 1,458 68     | 56 25        | 360 00       | 1,598 69     |
| September ..... | 1,853 75     | 3,000 71     | 1,423 45     | 3,289 11     |
| October .....   | 4,540 44     | 2,002 68     | 4,336 55     | 7,378 58     |
| November .....  | 5,007 23     | 1,358 17     | 5,335 80     | 7,015 86     |
| December .....  | 5,994 25     | 2,183 69     | 9,662 52     | 13,388 34    |
|                 | <hr/>        | <hr/>        | <hr/>        | <hr/>        |
| January .....   | \$ 57,331 45 | \$ 14,301 41 | \$ 22,386 89 | \$ 18,460 00 |
| February .....  | 82,476 58    | 23,122 41    | 51,109 98    | .....        |
| March .....     | 90,815 46    | 71,905 11    | 55,513 80    | .....        |
|                 | <hr/>        | <hr/>        | <hr/>        | <hr/>        |
|                 | \$271,408 42 | \$144,769 53 | \$182,172 09 | \$70,782 42  |

These figures would indicate a liberal use of fertilizers on the coming crop.

#### POSSIBILITIES OF A NITRATE PLANT.

In 1916 the Congress of the United States made an appropriation of \$20,000,000 for the erection of plant or plants to manufacture nitric acid from the nitrogen of the atmosphere, to be

used for munition purposes during times of peace and war, the surplus product during peace times to be manufactured into fertilizers and sold to farmers at cost.

The agricultural features of this Act, known as the Smith Nitrate Bill, for the author, Hon. E. D. Smith, junior Senator from South Carolina, are of momentous interest to the agriculture of the country and of paramount interest to the citizens of the cotton and trucking producing section of the South Atlantic, where the greater value and tonnage of soluble nitrates is consumed; though also of vital interest to the agriculture of the entire Atlantic Coast, so largely dependent on mineral nitrates.

In the summer of 1916 the Columbia Chamber of Commerce, with laudable enterprise, undertook to obtain the location of one of the units of this great undertaking for South Carolina, since the waste water power of the State and the excellent marl deposits on the Santee, as well as the phosphate rock beds near Charleston, combined with the free nitrogen of the air, fixed through electricity, would add enormously to the wealth of the State, and also put agriculture not only beyond the menace of stoppage of exotic nitrates supply, but supply the citizens of the country nitrates at cost of production.

Your Commissioner has deemed it wise for this Department to encourage this undertaking as far as he could, for undoubtedly the best location for the fertilizer unit of this undertaking is in the Southeast, where nitrates are so largely used, and not in the Central South or Central West, where they are not in demand and where farmers are not skilled in their proper use.

Perhaps no class of our citizenship has shown less interest in the erection of a Government nitrogen fixation plant for the manufacture of nitric acid for munitions, and of soluble nitrates for fertilizers, than the men who will be the principal beneficiaries of this new Government activity—the farmers themselves.

This indifference is very remarkable, in view of our sole dependence on Chile as a source of supply, the Government of that country at all times being at liberty to increase the export duty on the product. At the same time the owners of the nitrate beds are in position to increase the price to any figure they may desire, raising it as high as the exigencies of cotton and truck growing will stand.

In view of the enormous tonnage of sail and steam vessels already destroyed during the European war, it is likely that for

years to come the freight on this product will be as high as compared with pre-war times, and our crops must pay this toll.

At going prices for Chilean nitrates, a point is soon reached where it ceases to be profitable in agriculture, and this limits its use by the farmer. Certainly there are no farmers in the Union who are so skilled in the use of all fertilizers as the farmers of South Carolina, Georgia and North Carolina, and this applies with greater force to the use of soluble nitrates, for nowhere else in the country are such large amounts employed, nor has nitrate been used by others as long as in this section. And of the three States named, South Carolina farmers are more expert in the use of nitrates than the farmers of the adjoining States. In many States the use of nitrates in agriculture is unknown in practice.

South Carolina has ample power, ample lime carbonate, and many other advantages for the location of a Government nitrogen fixation plant, and furnishes the greatest market in the Union for its lime nitrate product.

It has been asserted on excellent authority that South Carolina alone, in agriculture alone, could profitably use 100 pounds of nitrate of soda, at going prices, on every acre of oats, cotton and corn, and many times that much on truck, and the Bulletins (No. 145, Clemson College; Bulletin No. 164, North Carolina Department of Agriculture; Bulletin No. 181, Alabama Experiment Station) and the settled practice of successful farmers bear out these scientific proofs—that, with cheaper sources of supply, South Carolina could profitably use 300 pounds per acre of nitrates for every cultivated acre in the State, and that if the product were nitrate of lime as produced by nitrogen fixation instead of nitrate of soda, the farmer would be getting two plant foods—lime and nitrogen—as against nitrogen alone in nitrate of soda. Soda is not necessary for plant growth, though plants can tolerate it, but do just as well without it.

The price of Chilean nitrate in this country is influenced by several factors, to wit—demand, return on capital invested, export duty levied by the Chilean Government, and the cost of transportation and distribution through middlemen.

The cost of lime nitrate, with horse power figured around \$6, is given as \$18 per ton for a product containing more nitrates and more plant food than a ton of nitrate of soda. Nitrate of soda has sold for somewhat less than \$40 per ton in normal times at ports in the United States.

It will thus be seen that, figured from the lowest price, the farmer will save around \$22 per ton on every ton of lime nitrate, and get more value for his money than if he could buy Chilean nitrate at the same price.

If South Carolina farmers could profitably utilize 350,000 tons of nitrate of soda at from \$40 to \$65 per ton, how much lime nitrate could be profitably utilized at \$18 per ton?

If one of the three plants is located in Columbia, its production will be equal to just 20 pounds of lime nitrate for every cultivated acre in the State. But this small amount, were the entire output used here, would effect a saving in the year of grace 1917 of no less than \$3,130,027 to the agriculture of South Carolina.

This saving, with nitrate of soda at \$40 per ton at the ports, would be \$1,446,000 a year, or slightly more than 6 per cent. annually on an investment of \$24,000,000.

Twenty-four millions of dollars would build and equip plants with three and a half times the output of the initial plant proposed for Columbia, and would provide 70 pounds of lime nitrate for every cultivated acre in South Carolina. On the basis of the lowest cost of nitrate of soda to the farmer, and of \$18 a ton for lime nitrate, the saving to the agriculture of the State would be \$5,390,000 annually, with the further advantage that the entire cost of the finished product would be kept in the State instead of going into the coffers of the Chilean Nitrate Syndicate, the Chilean Government, the steamship companies and the numerous middlemen. This saving would equal a dividend of more than 22 per cent. on the invested capital.

How long will we continue to overlook the favors Nature has so bountifully bestowed on us, and stop in a measure the everlasting waste taking place in South Carolina?

It may be argued that with the development of these natural resources the output will still fall short of supplying the South Carolina demand, and that some nitrates from Chile must still be brought in. In times of peace, the low price of the home product will have a tremendous influence on the price of the Chilean product, for with a 70 per cent. production in South Carolina, the Chilean product would compete with the local product, and in order to do this on equal terms the Chilean product must be sold at a lower price than the domestic article, for the domestic article will have considerably greater agricultural value. A further saving would thus accrue, probably amounting to \$2,316,000, on the

basis of \$40, and more than double that amount on the basis of \$65 a ton for Chilean nitrate.

There are gold mines in the air and in the Santee marl beds. The Congaree and tributary rivers can and should convert this "ore" into real gold, for on cotton and truck it will make unprofitable soil "pay dirt."

It would pay the State of South Carolina handsomely to buy up the water powers of South Carolina and donate them to the Federal Government, to be used in the production of nitrates to be sold to farmers at cost, and no investment she has ever made would be more profitable or advance the interests of the State so rapidly.

## VI.—MARKETING.

The establishment of the Bureau of Marketing in the Department has proven the most successful and popular of all of the undertakings of the Department of Agriculture. There is daily written testimonials from citizens of the substantial service it has rendered and is rendering in ever-increasing volume.

Realizing that the coming of the boll weevil would mean the introduction of new crops, and that there would be an ever-increasing demand for facilities for marketing these products, the Department shaped the organization of its Bureau so as to permit of instant and constant expansion as the demands upon it increased. Today the business of the Bureau is growing by leaps and bounds, and the cost of operation is infinitesimal as compared to the results. Louisiana, a State that has turned to new crops because of the boll weevil, wrestled with the problem in various ways. Three months ago the South Carolina system, to the minutest detail, was put into effect there, and, operating on a larger scale, it is solving Louisiana's marketing problems.

The fundamental principle of any marketing system looking to the most advantageous distribution of the products of the soil is that the system must open the door of opportunity to the individual, no matter how far back in the rural districts that individual may reside. The furnishing of general marketing information, current prices, etc., is good so far as it goes, but any system that stops there fails absolutely of its purpose. In the matter of marketing the perfect system must put it in the power of Tom Jones, living at Rural Route No. 8, to make known what he has to sell or what he wants to buy and enable him to deal directly with somebody who wants to buy what he has to sell, or who wants to sell what he wants to buy. This is the principle that the Bureau embodies.

After experimenting with problems of marketing for some time I speedily reached the conclusion that it was a waste of money, energy and time to touch any phase of the problem which neglected to consider the individual producer. Then it was that I evolved, based on my observations abroad, the system that we have put into full force and effect in the State of South Carolina, a system that has opened wide the door of opportunity to the

humblest citizen of the State, and makes it no longer obligatory upon him to try to get the names and addresses of people he wishes to deal with from general information as to possible markets.

In the inauguration of the system it was necessary, inasmuch as the State itself was engineering the matter, to avoid the assumption of responsibility for transactions undertaken through the efforts of the bureau, and that has been accomplished in an eminently satisfactory manner.

I have been asked why, if one State can operate this system, it can not be done in all States, the General Government being a clearing house for cases which can not be handled within the territorial boundaries of the several States, the central clearing house being built upon the present United States Office of Markets, and in this way obviate the necessity for the organization in the country at large under Federal authorization of the National Chamber of Agriculture. The impossibility of the suggestion is at once apparent when it is realized that each State is a sovereign unit and has a State legislature composed of some hundreds of men of different minds, making it absolutely impossible in each of the States to obtain the enactment of State legislation that would be uniform and fit into a uniform national system with each State as an integral unit. I can conceive of nothing that would be more impossible of execution.

What we have done in South Carolina, however, is nothing more or less than the exact application in one State of the fundamental principles and practices of the proposed National Chamber of Agriculture, which is designed to deal with the matter on a Nation-wide basis, providing that uniformity of procedure in each State that is absolutely essential.

The following letter, written in April to the Department of Agriculture in Pennsylvania, makes clear what we are doing:

Department of Agriculture, Commerce and Industries,  
Columbia, S. C., April 12, 1916.

*Mr. C. E. Carothers,*  
*Department of Agriculture, Harrisburg, Pa.*

My Dear Sir—I am in receipt of yours of April 6 and beg to advise that in this State we are handling the marketing proposition on a little different basis than anywhere else, perhaps, in the United States.

Our system is devised to serve the individual by name, no matter how far back in the rural districts he lives. When a man has anything to sell, he writes to the State bureau, stating what he has, the quantity, and the price. That is listed on the classified card-index system. The same process is put through with the man who wants to buy something, and he states his wants and the quantity. The State bureau acts as a clearing house and puts the two people together, and they conclude the transaction. Of course, such a system, confined strictly to the department and going only so far as I have indicated, would not accomplish the purpose. I therefore sought the co-operation of the press; and every Tuesday morning I issue a bulletin, a sample of which is enclosed, that is published, free of charge, by the six leading daily newspapers of the State and by twenty-one county newspapers, thus eternally keeping the wants and offerings before thousands of readers. This, of course, is the gist of the whole thing; and from the moment of publication throughout the balance of the week inquiries pile in, and the cross-fire of addresses is conducted through the office. You will observe that this cross-fire deals directly with the individual himself, and there is no glittering generality. In this way thousands of dollars' worth of transactions are put through; there are no middlemen's charges; and we handle anything relating to the farm, from a puppy or a dozen eggs all the way to a gasoline tractor, a piano, or a steam engine. Men hear of special varieties of live stock in this way that they would never hear of in any other way.

In addition to the general system, we issue every Thursday morning a printed bulletin that is sent to a mailing list of about 2,000 merchants and others who take commodities in commercial quantities.

I am happy to say that there is absolutely nothing that this department has ever organized and put into practice that has proven so popular to the masses of the people, rendering such widespread service, without cost to anybody, and with practically no cost to the State. Of course the fundamental foundation of the system we are using is in the co-operation of the press, and that has been most heartily given by the press, for the reason that they have found that it has stimulated to a very great degree the classified advertising and has in some instances doubled the subscriptions in the rural districts.

Very truly yours,

E. J. WATSON, Commissioner.



The operation of the bureau is very simple. Any citizen, no matter where he may reside, and it should be remembered that perhaps 150,000 read the Bureau of Marketing bulletins every Tuesday, has simply to write a post card to the bureau. Whether it is an offering or a want, it is immediately checked in a classified card index system, and if the article wanted is already offered by some one, the address of the party so offering, with all other information necessary, goes to the inquirer by return mail. At the end of the week, if there are offerings for which there have been no calls, or wants which could not be filled, they are listed within the bulletin, and invariably within a period of 48 hours calls for such articles come from various parts of the State.

There is now pending in the Congress of the United States a measure looking to the establishment of a National System of Chambers of Agriculture, designed to handle the marketing of the country (Senate Bill 5973 and House Resolution 100), on which a joint committee hearing was held in Washington last May. At that hearing the details of the workings of the South Carolina Bureau commanded particular attention, as will be seen from the official record of the hearing recently published as a Federal Public Document.

At this time the South Carolina Bureau ought to be expanded by law, and be enabled to extend its work either through local farmers' unions or farm loan associations.

## VII.—DRAINAGE.

Early in the year the State Supreme Court rendered its decision establishing thoroughly the constitutionality of the State Drainage Act, and it was generally believed that Drainage reclamation would proceed rapidly. But the year has passed with but little being accomplished.

When I reflect upon the inaction that has kept over 3,000,000 acres of the very richest soil in South Carolina in a condition of waste and unproductivity, and in fact a menace to the public health, my mind refuses to comprehend the *raison d'être*.

I have failed utterly to understand why the owners of this agricultural principality have remained idle all these years and seen the white population move away.

For twelve long years I have striven as State Commissioner and as President of the National Drainage Congress to rouse the people of the lower Mississippi valley and of the coastal plain of the South Atlantic to stir from their lethargy and awaken from the long sleep over their greatest potentiality. I have seen the seed take root in Florida, in Mississippi, in Louisiana, and in North Carolina. I have seen the enactment of excellent drainage reclamation Acts in all these States, including ours—and we have one of the best. Already upheld by the State Supreme Court, though there ought to be one more amendment to make the bonds sell more readily. I have seen the actual work get under way everywhere save in South Carolina—the conversion of thousands of acres in Florida, North Carolina, Louisiana and Mississippi from sour soil, water-logged, non-productive and malaria-laden swamps, of no money value, into perfect paradises of productivity and health. I have seen district after district formed across the line in North Carolina and the people go to work in such a way as to make these waste places of ages garden spots.

Even as I pick up the newspaper today I note the announcement of a new 15,000-acre district in Mississippi, and, more astonishing than all, the announcement that an undertaking is under way in the Piedmont County of Mecklenburg, North Carolina, far in the up-country, to drain and reclaim all the swamp and bottom lands in that county—some 50,000 acres. Now bumper

crops are being gotten on the portion already reclaimed. In Florida a million or more acres are already the most productive cultivated area in that State.

While all our neighbors have realized the opportunity and gone after results, we have seen our own people actually fight the few progressives who have tried to launch districts under the law in the courts, and actually estop the effort, as in the Hampton County case. We have seen the men who would most benefit by the reclamation proclaiming, "We don't want to tax our children's children," and that they were satisfied to leave things as they are. We have seen the white people with enough left to do so move away to other places, the percentage of deserted farms and homes increase, and the agricultural production of the veritable Eden formed by these Coastal Counties dwindle until it no longer figures in the general statistics for the State—dwindle into insignificance. We have seen spasmodic efforts, entailing a lot of hard and fine work on the United States drainage engineers, made from time to time, but fail of accomplishment in succession.

I have always maintained that the greatest undeveloped resources of South Carolina are in her Coastal Plain counties. There is an agricultural potentiality in these vast areas of deserted lands equalled only by the valley of the Nile when the water was given it. But they will remain valueless and unsettled and non-productive till doomsday unless the people realize that drainage reclamation upon an intelligent basis and in large units is the first and absolutely unavoidable step. Once drain these lands and then remove the soil sourness with the millions of tons of rich marl underneath and apply the raw rock phosphate also in the territory, and the door to the treasure chest and to the on-coming white settler will be opened for the Coast Counties. Any scheme of development that overlooks or neglects this great fundamental step is doomed to failure as sure as the sun shines, and retrogression will continue. The sooner the people realize that in order to progress the surrounding back-country must be made productive and populous, and get behind the only thing that can bring the coastal region into its own, the sooner will a real start be made.

I have drummed this doctrine into the ears of the men of the Coast since 1904, until in fact I have felt ashamed of myself, and, frankly, I have felt almost hopeless of ever seeing the start made in my lifetime. My one great ambition now is to see our Coast

country bound to the fore, as it can do, and I want to do my part. The whole American Continent is right now in the swing of its greatest period of prosperity and progressiveness, and it isn't right for our people to sit down idly on our richest asset, like a miser with a wealth of gold coins in a stocking, not having the common sense to put the capital to work to make more wealth. It is wrong and a reflection upon the people, and the industrial and agricultural statistics of the last ten years prove that it is, and no amount of hot-headed expression of satisfaction with conditions can rub it out.

#### **SURVEYS DURING THE YEAR.**

During the year the United States Drainage Engineers—F. G. Eason, Charleston, in charge in South Carolina—made investigations, surveys and estimates on drainage undertakings as follows, as well as for a number of Tile Drainage undertakings: Combahee Corporation Project, Georgetown Drainage District No. 1, Whipple Brothers' Farm at Beaufort, Big Kingstree Swamps Project in Williamsburg and Florence counties, Shultz Lake Plantation, Dorchester County, the Dobbs-McBride Lands in Sumter County, the Jacques Farm in Colleton, the Thickety Creek Project in Cherokee, farms at St. Matthews and Summerville, the Eighteen Mile Creek District in Anderson and Pickens counties, the Ashley Hall Plantation, the D. W. Alderman Farm in Clarendon, the Old State Roads Swamp, the Southern Stock and Farming Company of Charleston, and the Tillman and Marshall Bottoms on Wilson's Creek in Greenwood.

What headway, if any, has been made with the formation of Districts heretofore projected in Orangeburg and elsewhere, the Department is not advised.

At the final hearing on the Eighteen Mile Creek Drainage District, the Court approved the report of the Commissioners and declared the District established. The assessments vary from \$5.85 per acre to \$26.75 per acre.

With the close of October, Charles W. Okey, S. D. E., who has been connected with the United States Office of Drainage Investigations for a number of years, left the staff to assume charge of the construction work of the Combahee Corporation project at Whitehall. This undertaking is on a large scale and is full of promise for the Coast County.

**SHORTER TERM BONDS WANTED.**

A representative of one of the bonding companies which specializes in drainage bonds has written me, suggesting a further amendment to the drainage law, and this request is called to your attention. He writes:

"We prefer all drainage bonds to run no longer than thirteen years. When the district is laid off, the Drainage Commissioners should calculate in the cost interest on the bonds for three years. After the bonds have run for three years, the property owners should pay one-tenth of the principal each year, thus retiring the bonds in ten years. This is long enough to run the bonds, and it does away with the investment of the sinking fund. The bonds should be issued at a rate of interest not to exceed 6 per cent, and this would enable good districts to try to sell their bonds at less than 6 per cent, and, if possible, the smaller districts could get them off at 6 per cent.

"We have bought every issue of drainage bonds in North Carolina during the past two years, and we consider the North Carolina drainage law a very good law, and they run their bonds as stated above, and they always sell readily.

"Your law makes the maturities too long, and the bonds can hardly be sold. The best drainage district I think I ever saw was the Rocky River Drainage District in and around Anderson, South Carolina, and it was almost impossible for these people to sell their bonds. No bond house would buy them at all. They finally sold the bonds to a private investor, but at nothing like the price they could have obtained if their bonds would have been acceptable to bond houses. I refer you to Col. M. L. Bonham for confirmation of this matter. He was the attorney for the drainage board and had the proceedings in the very best of shape. Some of this land in this district actually sold at \$800 and \$1,000 per acre, and the finest farms I have seen in the State were in this district. The same trouble will be everywhere in the State until the law is amended. You can write to every bond house that deals in drainage bonds, and you will see that I am correct. When the drainage business started, many years ago, long maturities were thought best, but now investors only want short-term drainage bonds, and the farmers don't like them so long.

"I am enclosing you a list of some of the bonds I have bought. Since this list was gotten out I have bought at least \$2,000,000

more. You will see that we buy a lot of bonds in the Carolinas, and I think it would be to your State's interest to issue a drainage bond that we could handle and be better suited to other bond houses. I am writing you this so that the matter can be called to the attention of your Legislature now in session, if you think proper."

## VIII.—DIVERSIFICATION AND GRAIN.

So much has been said on this vitally important subject of raising the things man and beast need to eat at home, and so generally has the doctrine been spread for years by this Department direct to the people that it almost seems superfluous to say anything here.

I will simply again call attention to the money spent away from home for these things that can be raised at home, and the estimate on December 31, 1916, which is most conservative, is astounding—it should carry its own lesson:

|                                   |                 |
|-----------------------------------|-----------------|
| Bacon (Sides, Strips, Hams) ..... | \$10,761,891 00 |
| Flour .....                       | 10,802,756 00   |
| Corn Meal and Grits .....         | 10,165,700 00   |
| Beef .....                        | 9,100,000 00    |
| Canned Goods .....                | 13,898,600 00   |
| Butter .....                      | 6,565,000 00    |
| Milk .....                        | 1,168,000 00    |
| Mules and Horses .....            | 10,000,000 00   |
| Commercial Feed Stuffs .....      | 1,929,416 00    |
| Corn .....                        | 6,136,000 00    |
| Oats .....                        | 3,162,000 00    |
| Hay .....                         | 2,362,000 00    |
| Lard .....                        | 8,302,125 00    |
| Cheese .....                      | 2,014,000 00    |
| Eggs .....                        | 612,000 00      |
| Cabbage .....                     | 506,000 00      |
| Potatoes .....                    | 456,000 00      |
| Turnips .....                     | 226,000 00      |
| Onions .....                      | 250,000 00      |
| Seeds .....                       | 200,000 00      |
| Candies .....                     | 150,000 00      |
| <hr/>                             |                 |
| \$98,767,488 00                   |                 |

### HELPING THE SITUATION.

As a result of the campaign to get the people to raise small grain, corn, grasses, etc., and in consequence of the effort made to get flour mills, grist mills and mixed feed mills started, in

order to keep some of this money at home, it is gratifying to state that the following are now manufacturing mixed feeds:

**PRINCIPAL MIXED FEED PLANTS.**

Adluh Milling Company, Columbia, S. C.  
 Molony & Carter Company, Charleston, S. C.  
 Kirkland Distributing Co., Columbia, S. C.  
 J. W. Bell, Spartanburg, S. C.  
 Spartan Grain & Mill Co., Spartanburg, S. C.  
 Ayers & Williams, Orangeburg, S. C.  
 Bailey Distributing Co., Columbia, S. C.  
 Eagle Rolling Mills, Greenville, S. C.  
 Mountain City Milling Co., Greenville, S. C.  
 Gignilliat & Co., Seneca, S. C.  
 Marion B. Leach, Greenville, S. C.  
 Mixon Seed Company, Charleston, S. C.  
 I. M. Pearlstine & Sons, Charleston, S. C.  
 T. M. Finucan, Summerville, S. C.  
 C. L. Schmancke Grain Co., Charleston, S. C.  
 John Whohlman Co., Charleston, S. C.

**PRINCIPAL FLOUR AND GRIST MILLS.**

And the following are the larger plants now manufacturing flour and grist:

Burris Milling Company, Anderson, S. C.  
 High Shoals Milling Co., Anderson, S. C.  
 Lebanon Flour Mills, Pendleton, S. C.  
 Storeville Mills, Iva, S. C.  
 Peace, Masters Company, Anderson, S. C.  
 Jones A. Williams, Bamberg, S. C.  
 A. E. Corley, Dunbarton, S. C.  
 St. Matthews Roller Mill, St. Matthews, S. C.  
 Acme Mills, Charleston, S. C.  
 The Blohme Milling Co., Charleston, S. C.  
 West Point Mill Co., Charleston, S. C.  
 Buffalo Roller Mills Co., Blacksburg, S. C.  
 Victor Cotton Oil Co., Gaffney, S. C.  
 Ruby Roller Mills, Ruby, S. C.  
 Clarendon Roller Flour Mills, Manning, S. C.  
 The Darlington Roller Mill Co., Darlington, S. C.  
 Page's Grist Mill, Lake View, S. C.



Johnson Roller Mill, Johnston, S. C.  
 The Enterprise Mill, Ridgeway, S. C.  
 Lake City Roller Mills, Lake City, S. C.  
 Baskins Meal Grist Mills, Florence, S. C.  
 Florence Ginning & Milling Co., Florence, S. C.  
 The Mountain City Milling Co., Greenville, S. C.  
 Eagle Roller Mills, Greenville, S. C.  
 Cedar Falls Roller Mills, Fountain Inn, R. F. D.  
 I. B. Stockman Milling Co., Greenwood, S. C.  
 C. E. Perry Rice and Grist Mills, Ridgeland, S. C.  
 C. D. Barr Flour Mills, Leesville, S. C.  
 H. Z. Ricard Flour and Grist Mill, Edmunds, S. C.  
 Sol A. Meetze Roller Mills, Chapin, S. C.  
 Laurel Falls Roller Mills, Lexington, S. C.  
 Calhoun Roller Mills, Mt. Carmel, S. C.  
 Mrs. C. A. Shumpert Roller Mills, Newberry, S. C.  
 L. C. Singley Roller Mills, Newberry, S. C.  
 Farmers' Oil Mill (Flour Mill), Newberry, S. C.  
 John's Mills, Westminster, S. C.  
 J. E. Kelley's Mill, Walhalla, S. C.  
 West Union Flour Mills, West Union, S. C.  
 A. S. Duke's Mills, Branchville, S. C.  
 N. E. Smith, Easley, S. C.  
 Easley Roller Mills, Easley, S. C.  
 H. W. Hamilton Grist Mill, Easley, S. C.  
 Kirkland Distributing Co., Columbia, S. C.  
 Spartanburg Roller Mills, Spartanburg, S. C.  
 Yarbrough Flour and Grist Mill, Enoree, S. C.  
 Foster's Flour and Grist Mill, White Stone, S. C.  
 Sumter Rolling Mills, Sumter, S. C.  
 Union Roller Mills, Union, S. C.  
 R. J. Davis Flour and Grist Mill, Clover, S. C.  
 Catawba Milling Co., Rock Hill, S. C.  
 Yorkville Cotton Oil Co., York, S. C.  
 Central Roller Mills Co., Central, S. C.  
 Egypt Roller Mills Co., Bennettsville, S. C.  
 Tiger Shoals Milling Co., Wellford, S. C.  
 Taylor Roller Mill, Taylors, S. C.

#### **AN APPEAL.**

In connection with this all-important matter of diversification, the following issued by the Southern Association of Commis-

sioners of Agriculture, at their recent meeting in Richmond, should be heeded throughout our State:

*To the People of the South:*

At Norfolk we have attended a great gathering, the theme of which has been "international reconstruction" and the part the South will play in those readjustments of world economics and commerce following the close of the world war. We have come from this gathering convinced that in any scheme of international reconstruction the States of the South must play a principal part—a role of vital concern financially and commercially. The South, with its great money crop—Cotton—gives to the nation annually wealth to the extent of a billion and a quarter dollars. It possesses a world monopoly in this indestructible commodity that is the basis of American finance. It is the South that must clothe the peoples of the world, and it is the South that must soon help feed the peoples of this nation and those of the devastated countries of Europe during their period of recovery. Any section of the world so favored must command attention in any scheme of world economics.

We feel that the South should understand its opportunity to develop to the fullest its resources. We feel that it is of National concern that every step possible should be taken to economically produce cotton in a well-balanced system of agriculture, and that while the National Government under the present administration has done much by the recognition of cotton as a basis of credit through the National Regional Reserve Banking system, through the Cotton Futures' Act and through the National Warehouse measure, it should go further and throw every fostering care and protection around such a source of national wealth, not in a paternalistic way, but in such a way as to insure to the men who produce this wealth from the soil a fair and just return for their labor and the use of their land, and to protect them by every legal means from the professional parasites—the middlemen and the gamblers in futures. We feel that it is the duty of the National Government to insure by proper grading and every other intelligent requirement against the passing of the raw material into speculative hands to be manipulated to the advantage of the few and to the financial injury of the Nation itself.

We would, therefore, urge the men of the South to study the economics of our basic sources of wealth and to be alive and

active in all matters tending to their conservation. We would urge upon our people to take advantage of the Rural Credits Act and other facilities, that the oppressive credit system of the South shall be uprooted forever, and instead establish production in a rational system of Agriculture, with cotton as a major crop, and by an independent home-making and home-building citizenship emancipate the people in tenancy bondage.

We would urge our people to combine in a mighty effort for the dethronement of ignorance and the enthronement of intelligence. We feel that so far only the surface of golden opportunities has been touched. We feel that ignorance and politics, the twin curses of every land, the demagogue and his plaything, are the greatest barriers to a development in the South such as the world has never seen. We feel that an educated citizenship is our first great need. It is the fault of our State Governments that they have permitted so many people to arrive at the estate of manhood and womanhood unlettered and untrained, that educational facilities have not been provided, that each man has not been given a chance to do a man's part in the world of men. It is this that the political demagogue has played with, purposely desiring to keep the people ignorant. It is this that explains the pocket pistol and gives headlines to the sensational journal. It is the explanation of the flourishing growth in the South of the oligarchy of supply merchants and the usurious credit system, with its trail of foreclosed mortgages, hopeless tenants and pile of poverty for the producer. It is the explanation of the evacuation of farm homes by farm boys and girls for the uncertainties of the town and city.

This is the explanation of the Tonic-System of treating soils and plants, with the soil ever and every growing weaker, while the false cry of "increased yields" is raised. It explains the fearful misuse of commercial fertilizer upon such an ignorant basis that the drain on the Southeast for this one element in the cost of production runs into the multi-millions of dollars. This is why in one section of the South we have treated the soil, the fundamental source of all wealth, as a drunken sailor treats his pay when he gets ashore. It is why soil depletion has gone as far as it can and why the hour for the return to intelligent handling of the soil on a basis of maintained soil fertility is at hand; why we must start all over again in some sections, with legumes and live stock, and must restore calcium carbonate and bacterial life, now

all but exhausted. And so we appeal to the men of the South, where general rotation and modern methods have not been employed, to realize that artificial forcing on a soil depletion basis, and on a one-crop idea, is not economic production of wealth and permanent development; that every energy should be bended to the restoration of soil fertility.

Lack of knowledge and recognition of false methods has led us to take no cognizance in a business-like, intelligent way of costs of production, and explains why we flounder along in the dark, often finding a man raising cotton at an actual cost of 20 cents per pound, corn at a cost of \$1.15 per bushel, and hog meat at 12 cents per pound, without knowing it.

Soil science as such is as yet a closed book, and present-day methods are as yet ineffective in reaching the root of the trouble. We call upon all agricultural workers, Federal and State, in hearty co-operation with the people to bend all their energies to bring about a restoration of intelligent soil handling, to the end that payment of heavy "doctor's bills" for the treatment of a sick soil be eliminated as far as possible.

Then comes the problem of economic production—teaching the farmer to study a proper system of accounting and getting at the cost of production of all of the commodities he raises, and teaching how to balance his undertakings out intelligently, so that he will make fair profits. This problem can be solved, but it must be done by intelligently directed co-operative effort and not by bigoted ignorance.

Incidental to all production, and an important element, is labor. It is one of the South's real tasks to handle its labor problem. Whether it will be done by making the negro more efficient or by the utilization gradually of other labor, and the distribution of the negro over the country, as farming becomes more diversified and intensive, it is not for us to say. We believe it will be solved by training the negro to be a more efficient and useful laborer, and through efforts to that end instead of by general education.

But why solve the problem of soil conservation and economic production? Why ask the farmer to raise more than he can sell and let it go to waste? Why encourage over-production in Texas or in Maine of products that there is great demand for in Oregon and Nebraska? As things now are, the Nation is without efficient National or State governmental agencies to look to distribution of products in such a way that the individual on the distant rural

route can benefit by them. It is true that transportation facilities are being improved, and the general government and the States have made a beginning in the matter of public highways, but as yet the "distribution" of products is in the hands of countless and useless middlemen, and the people of the nation are at their mercy, the more so in proportion as ignorance prevails in the section. Profits belonging legitimately to the producers are absorbed by the army of parasites for their own enrichment. The tremendous demand for efficient and sufficient methods of distribution and marketing comes from all parts of the nation. The creation of the present Marketing Bureau in the United States Department of Agriculture is but the manifestation of the realization of the government that an attempt to do something must be made. We have no criticism of the scores of men employed in this branch at this time, but we do assert that any effort that fails to open the opportunity to buy and sell to John Jones, living at Route No. 4, Jonesville, Texas, as an individual, is money wasted and is doomed to failure. Distribution and marketing are severely practical business propositions, and theoretics will never solve the problem. The modification of the German system of chambers of agriculture, provenly efficient, ought to be established in this country just as quickly as it could be done. The boll weevil has forced the South to diversify crops, and right now in every Southern State, distribution is a pressingly vital problem.

Now that government lands in the West have nearly all been taken up, with the increase in population of the country there is a demand for new areas to be put under cultivation—lands that can be bought reasonably and lands of great natural fertility. Down the Atlantic Coast there are millions of acres of the richest land in America now lying idle, a menace to the public health with deadly malaria, capable of reclamation by drainage at around \$4 per acre. Once reclaimed they are worth \$100 to \$200 per acre, and thousands of deaths from malaria would cease. Even for army purposes the vast areas are barriers and useless. The problem is largely interstate. From every standpoint of national wealth and health these lands should be reclaimed, and the National government and the State government and the owners should participate under a National reclamation law in the small expense of doing the work without delay.

Another of the South's problems is how to develop the com-

merce of her splendid ports. Why raise export products only to lose legitimate profits by costly rail hauls to Eastern ports to start them into the channels of the world trade? Ships flying the American flag and sailing to South America and the Orient the South needs and wants. The South has manufactures, has products of the forests and of the mines, and the South wants to ship these articles of world commerce direct to the foreign buyer and consumer. The South would like to use the many-million-dollar Panama Canal—the good road we've built at great cost for our competitors to use, without building a few vehicles of our own to pass over it.

These problems we have so briefly referred to are all pressing for solution. Some may find their solution by the business men of the South; others may call for the co-operative aid of Federal and State governments, and legislation by both; but all of them are of such concern to the people of the several States and the Nation that there must be a complete elimination of politics and bigotry and of selfish egotism. There must be complete and thorough co-operation of all forces, and clean, clear-cut criticism of methods not calculated to bring results must be welcomed, and not treated in such a way as to destroy co-operative spirit and chill enthusiasm.

In the consideration of all these problems, if we are to solve them, if we are to participate fully and effectively and beneficially in the international reconstruction that is ahead, we must remember that we need the very best, that is in all of us, and, above all, that while we are Southerners and love the South, we are Americans and stand as one man for the slogan, "America First."

E. J. WATSON,

W. A. GRAHAM,

H. K. BRYSON,

Committee.

## IX.—COMMERCE AND INDUSTRIES.

Having treated the industrial development of the State fully in the separate report on that subject I shall not review the status of the industries herein. This has been the best year in the history of the State for the various industries, particularly the textiles.

In the transportation world the new Seaboard Air Line Charleston to Savannah line is nearing completion, and the opening of this line will mean the development of one of the best trucking sections of the State.

Efforts are now being made to improve the river navigation service to Columbia from Georgetown, and further improvement of the river itself is contemplated.

New interurban electric lines are in contemplation.

The most noteworthy advance in manufacturing has been made in the matter of flour and grist mills, and mixed feed plants.

In our manufacturing plants labor conditions are good. We have had during the past few months a textile strike at two mills in Anderson, but that now has been happily settled and there are no disturbances anywhere in the State so far as I am advised. The textile plants have turned out this year an annual product worth \$109,462,693, which is \$33,787,496 increase over last year, the largest increase we have ever recorded in a single year in any line of manufacture in South Carolina. The textile plants are now employing 53,039 people, which is 2,442 more than a year ago, and the number of children employed is 449 less than a year ago. Furthermore, on January 1 all children under the ages of 14 years will be automatically eliminated by law from the textile plants. The textiles have paid out this year \$17,452,342 in wages, which is \$1,662,695 more than last year. Many of the mills voluntarily granted 10 per cent. increase in wages.

The cotton seed crushing industry shows an increase in value of product this year of \$754,963, the total value of the product turned out being \$15,162,501.

There is \$159,965,202 of capital invested in manufacturing in the State. Of this practically \$90,000,000 is invested in textiles, and the textiles are producing annually from raw material grown on the farms over \$100,000,000 worth of products. I do not

believe the textiles are getting for their products what they ought to, and I said so to the Manufacturers' Association at their last meeting in June. The bulk of them market their products through selling agencies thriving in New York, and their products go mostly to export, while the people of the State buy cotton products sent down from the East or from abroad. But of that perhaps the immediate future holds something.

Raw lumber, which is the next largest industry, is, of course, a destructive industry rather than a constructive one.

Reviewing the whole situation from the standpoint of the manufacturing industry our people are really advancing slowly. Aside from the manufacture of fertilizers, the operation of little over \$4,000,000 worth of oil mills and a few foundries, there is not much else. All over the State in every town and city opportunity is bristling for small diversified industries, manufacturing, clothing, over-alls, furniture, mattresses, brooms, harness, shoes, canneries, mixed feed mills, flour mills, grist mills, and all those articles of commerce that we now buy from somewhere else. Even the bulk of the coffins and caskets in which we bury our dead are bought in all portions of the United States, but are not made to any extent from our native woods in our own State. With developed water power, easily available in two-thirds of the State and the chances for economical operation of small factories, it seems incredible that we should be so neglectful.

Much headway has been made in the textiles in the matter of protection of labor (and up to 1900 there were no labor laws), and the conditions of the laboring people have been greatly improved, and their scale of wages bettered, but as yet those conditions are not what they should be and will not be what they ought to be until larger profit in the operation of the plants can be brought about by more economic marketing of the manufactured product.

We have as yet been asleep as to our opportunities for the development of foreign trade through the great port of Charleston, and we ought now to be making ready in that regard for the expansion that will follow the close of the European war. Charleston is entitled, by reason of her deep water and excellent coaling facilities, to better than mere coastwise and tramp steamer service. Much has been done, but only a beginning has been made.



We have been asleep as to the utilization of our waterways, and even today with the Congaree river open to Columbia in the very heart of the State our merchants do not give the boats operating there sufficient freight to keep them alive and open.

A notable event of the year has been the full development of the automobile manufacturing enterprise at Rock Hill. This plant, putting out the "Anderson" motor car, is being greatly enlarged and is meeting with great financial success.

The mineral and soda water bottling business has developed with wonderful rapidity. The output of these plants now aggregate \$2,003,071.

The Chambers of Commerce in the State are continuing active and energetic.

## X.—THE PUBLIC HIGHWAYS.

For some years—eight, in fact—this Department has steadily called to the attention of the General Assembly the necessity for the creation of a State Highway Department, or, if it was desired to save expense, a Bureau of Highways in this Department, and for provision to be made for a State-wide system of licensing, with annual tax imposed, of motor driven vehicles. I do not feel that it is proper for me to again urge the overwhelming arguments for something to be done for the highways with a view to reducing the farmer's transportation costs, or to show that South Carolina is one of the few States that has taken no action.

During the year the long-expected Federal Aid Road Act was passed by Congress and was approved by the President, carrying \$20,000,000 of appropriations for highways to be used in a co-operative way with the States. Under this Act the first year 1917, this State is entitled to \$71,807.64, with increasing annual amounts as each year passes until the entire appropriation has been used. But the State cannot get it until by law it has created a Highway Department or conferred the necessary authority to comply upon an existing Department, and given that Department the right to employ competent highway engineers. This situation seems to make some action at the present session imperative. I would under the circumstances renew the recommendations and offers made by this Department in the past, with a view of bringing to the work experience with and knowledge of road conditions in the State and accomplishing a maximum of results at the minimum of expense, but shall urge no line of action upon the General Assembly.

As soon as the Act was approved, citing provisions of the law creating this Department, I had the Washington authorities to pass upon the eligibility of the State under existing laws to participate in the Federal Fund, the decision was adverse to my contention, and the door is now closed until the General Assembly acts.

During the year, as in the past eight years, this Department gave a great deal of attention to public highway matters and undertakings.

The Appalachian Highway, the building of which was undertaken the preceding year at the instance and initiative of this Department, was completed and opened in the spring.

The Department during the year, after months of work gathering the data and making surveys, issued a public highway map, which has attracted favorable comment all over the United States for the principal reason that coincident with it the Department undertook the marking of the main arterial highways with colors, and the map was so prepared as to be the practical key to the system.

The Department took the initiative in the work of rehabilitating the old State Road from Columbia to Charleston, which resulted in the raising of about \$10,000 and considerable contributions of teams and labor, and which is now under construction.

Material aid and advice was rendered in the McCormick County campaign for good roads, and in other campaigns.

When the floods came and wiped out whole sections of highways and scores of bridges, destroying all the main bridges over the Catawba-Wateree water courses, the Department rendered services to the public that were untiring and were appreciated.

This Department feels that it has done its best by the public highway situation in the State up to date, and has no reason to be ashamed of the foundation its work has laid in the way of moulding public sentiment and in substantial constructive efforts for the building of a genuine State control system which will lift the people out of the mud and the mire.

During the year the Federal Government continued its maintenance work on the Washington-to-Atlanta Highway, which is now in very fair condition.

Greenville County, under its bond issue, of course led all the counties of the State this year in permanent highway building. In Richland County the bond issue was defeated upon seemingly purely political issues. Toward the end of the year there has appeared quite a wave of public sentiment for better highways in many counties, and it would seem that South Carolina counties are at last about to follow the lead of the counties in North Carolina and other sister States.

## **XI.—COMMERCIAL FEED STUFFS.**

The enforcement of the Commercial Feed Stuffs law of the State is now more vigorous than ever, and I believe I am warranted in saying that no State in the Union at present is cleaner of inferior products than South Carolina. The most vigorous kind of an inspection is conducted throughout the year by inspectors traveling State-wide and alternating territory. All stocks shipped into the State are carefully examined as to tagging and stamping, and samples are regularly drawn and examined without delay in the laboratory.

The Commissioner has endeavored to exercise the right of seizure and the right to collect costs of inspection with discretion, and to be fair and impartial to all, when it is manifest that there was no deliberate intention to violate the law. When the contrary is evident the provisions of the law are exercised to the limit. Without this power for speedy action, the enforcement of any such protective law would be impossible. The light penalties and long drawn out proceedings for seizure under the Federal Laws make those laws even now scarcely more than a farce. Sometimes it is three years before action results and then a \$10.00 or \$15.00 fine is imposed. The dishonest manufacturer almost considers it a joke.

### **FEDERAL CASES.**

Being clothed with Federal authority, however, in purely inter-State cases that can be reached in no other way, the Department frequently goes through all the red tape incident to the Federal law and sends the cases to the United States courts. The District Attorneys in this State, and their assistants, have co-operated diligently in all such cases.

### **A BAD TENDENCY.**

During the year there developed a tendency on the part of many Middle Western manufacturers to use mill screenings, sweepings, grass and weed seeds and other cheap waste in low grade feeds. This Department has declined to allow the use of ground peanut hulls, ground rice hulls and ground miscellaneous seeds, and has refused registration of such offerings.

**NEW FEEDS.**

New feed materials are now beginning to come into the markets and this will be more extensive as new crops take the place of cotton upon the arrival of the boll weevil. Soy bean and velvet bean meal and peanut meal are now getting a good hold on the market and are taking the place of low grade cotton seed meal and feeds.

**KEEPING MONEY AT HOME.**

In South Carolina, at Charleston, Columbia, Greenville, Spartanburg, and other points home mixed feed plants of considerable capacity are in operation, and all of them, I am happy to say, are doing well. They use for the most part home raised raw materials, opening bulk markets for surplus corn, oats and other products, and money is being kept at home that heretofore went out of the State. Early in the year several new plants of this kind will be opened. The Department aids each new plant in the preparation of formulae for the mixtures, and with experienced advice. With the coming of the boll weevil and the rapid turning to live stock the demand for mixed feeds will greatly increase, and the manufacturing of these feeds from home products will unquestionably develop rapidly.

**RICE PRODUCTS.**

The rice products situation, which a few years had to be thoroughly cleaned up, no longer gives any serious trouble—in fact practically none.

**A DUMPING GROUND FOR HAY.**

There is still bitter complaint from all parts of the State that hay is not included in the law, and that shippers are allowed to send into the State any quality of rotten hay they desire. There is no inspection and the merchants often pay fancy prices for worse than nothing.

**STANDARDS UNCHANGED.**

This State has uniformly maintained the standard fixed several years ago and no changes have been made this year except to lower the standard for beet pulp, a pure product, to 7 per cent. protein, and except to change the nomenclature for cotton seed products, to cure a situation that was becoming intolerable and costing the farmers much money.

There have, from one or two sources, as heretofore, been protests against the standards for wheat products, but as 98 per cent. of the manufacturers in the United States have had no complaint and encountered no difficulty in meeting these standards they have not been changed.

#### NEW COTTON SEED PRODUCTS REGULATION.

Referring to the cotton seed product situation, referred to above, after several flagrant cases of abuse had developed, I promulgated Refutation 23, and issued the following self-explanatory circular:

#### STATE OF SOUTH CAROLINA

Department of Agriculture, Commerce and Industries.

Columbia, S. C., August 27, 1916.

Circular No. 6.

*To All Cotton Seed Crushers, Manufacturers of Cotton Seed Products, Distributors and Merchants:*

Whereas, during the past season there have occurred so many cases of abuse of the consuming public by substitution of low grade cotton seed products for standard products at standard product prices, that standard cotton seed meal has practically been run out of the markets of the State of South Carolina; and whereas losses to consumers using low grade material for both feed and fertilizer have become so great, I have deemed it necessary in the exercise of authority vested in me by law to promulgate new regulations governing the sale of cotton seed and cotton seed products for feed purposes, introducing a system of nomenclature that it is believed will cure the abuses that have become flagrant during the season of 1915-16.

On and after September 15, when the term "Cotton Seed Meal" is used in an application for registration, or on the tag, the material will have to be standard cotton seed meal, and that alone. The term Feed Meal is abolished by the new regulation, and all cotton seed products made from a mixture of meal and hulls will hereafter be sold under a brand name accompanying the term "Mixed Feed," and the use of the words "Cotton," "Cotton Seed," "Cotton Seed Meal," and "Meal" in connection with such feeds will no longer be permitted.

Notice is hereby given that on September 15 all registration granted in this State during the year 1916 of cotton seed products

showing less than 36.0 per cent. Protein, and Sea Island Cotton products, will be canceled and declared void, and on or before that date all manufacturers intending to do business in cotton seed products in this State will be required to file new applications for registration complying with new Regulation No. 23, a copy of which is furnished you herewith for your guidance and information.

The year's history of the business in cotton seed products is replete with instances of the sale to ignorant consumers, who knew no better, of products worth \$19.00 per ton at the rate of \$32.00 per ton. It has been manifest for some time that in order to maintain the integrity of standard cotton seed meal in the markets of this State the action I have taken under the law is absolutely necessary.

I beg to advise all manufacturers and distributors in this and other States who intend to do business in this State in these products that strict compliance with Regulation 23 will be required and enforced. This circular is issued at this time, therefore, and the regulation is promulgated at this time in order that all stock on hand in the State may be disposed of by merchants in whose hands it may be, and in order that all manufacturers may be fully prepared to meet the new requirements by the date the regulation becomes effective.

E. J. WATSON,

Commissioner of Agriculture, Commerce and Industries.

Note: Registration granted you on the following has been cancelled, effective September 15, 1916, and it will be necessary for you to apply for new registration in accordance with the terms of Regulation 23, effective September 15, 1916:

Regulation 23, issued at the same time, was as follows:

AMENDMENT TO RULES AND REGULATIONS PROMULGATED UNDER SECTIONS 2429 AND 2430 OF THE CIVIL CODE OF 1912, AND PUBLISHED IN BULLETIN NO. 46 ISSUED OCTOBER, 1914.

By authority vested in me by law I hereby promulgate and issue the following amendment to the Rules and Regulations issued under Section 2429 and 2430 of the Civil Code of 1912, published in Bulletin No. 46, October, 1914, said amendment to become of full force and effect on September 15, 1916, on and after which date the new regulation will be vigorously enforced.

Strike out all of Regulation 23 appearing on pages 10 and 11 of Bulletin 46, and substitute therefor the following:

23. All meal manufactured from cotton seed showing 36 per cent protein and higher, when offered on the market, shall be branded "Cotton Seed Meal" in exact accord with the form of tag appearing on page 6 of said bulletin, and must be so branded on the package or the tag. The price paid for cotton seed meal depending on its protein content, the following nomenclature may be employed in branding the product on the tag or on the sack:

1. "Choice Cotton Seed Meal," containing at least 6.59 per cent nitrogen or 41.15 per cent protein.

2. "Prime Cotton Seed Meal," containing at least 6.18 per cent nitrogen or 38.62 per cent protein.

3. "Cotton Seed Meal," containing at least 5.76 per cent nitrogen or 36 per cent. protein.

The term "Cotton Seed Meal" shall under no circumstances be applied or used in connection with any product made from the manufacture of cotton seed which contains less than 36 per cent protein, and any such product found on the markets so labeled will be considered misbranded, and will be subject to confiscation, and those offering it subject to prosecution in accordance with the terms of the law.

#### **BRANDING MIXED FEEDS MADE FROM COTTON SEED.**

Any product resulting from the manufacture of cotton seed which shows less than 36 per cent protein and 3 per cent fat, and does not run lower in protein than 14.50 per cent is considered a mixed feed, and the use of the words "Cotton," "Cotton Seed," "Cotton Seed Meal" or "Meal" in the brand name is hereby prohibited. All such mixed feeds will only be granted registration under a brand name accompanying the words "Mixed Feed," as, for instance, "Prime Mixed Feed," and the only use that can be made of the words specified above shall be in the statement of ingredients printed in the inconspicuous manner indicated on the specimen tags appearing on page 6 under the guaranteed analysis. These mixed feeds when so labeled must comply with all requirements of the Commercial Feed Stuffs Law and the rules and regulations thereunder in regard to mixed feeds.

#### **SEA ISLAND COTTON SEED PRODUCTS.**

All feed made from the manufacture of Sea Island cotton seed showing not less than 25 per cent protein shall be labeled "Sea



Island Cotton Seed Meal," and all feed manufactured from this material showing less must be branded under a brand name accompanying the words "Mixed Feed," the statement of ingredients being made in the same manner as required for mixed feeds made from ordinary cotton seed as specified above.

E. J. WATSON,

Commissioner of Agriculture, Commerce and Industries.

August 29, 1916.

This new regulation is now being most vigorously enforced, and is working well; its operation has practically cured the trouble which caused the action to be taken.

#### VOLUME OF BUSINESS.

During 1915 there were 105,597.68 tons of cotton seed meal and mixed feed sold for feed purposes. The tonnage of cotton seed meal for feed was 44,791.06, and of mixed feeds 60,806.82. This represented a value of \$3,513,504.94, fully two-thirds of which was sent out of the State.

During the first part of the year 1916 the sales of cotton seed meal for feed purposes were less than one-half of the tonnage for the same period of 1915.

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#### CHIEF CHEMIST'S REPORT.

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.:*

Dear Sir—I have the honor to submit for your approval this, the sixth annual report from the State Laboratory on Feed Stuffs for the year ending December 31, 1916.

There has never been a time when such inspection as that of feed stuffs was more important than at present. The enormous increase of the price of feed stuffs is causing many manufacturers to try substitutes for some of the ingredients in order to reduce expenses, hoping to realize the same or even a greater profit than when ingredients were much cheaper. In this way attempts have been made and are still being made to place on the South Carolina markets a cheap quality of feed stuffs. For this reason the Department is giving close attention to this inspection and is rigidly enforcing the law in order that the high standard maintained in this State during the past two years for this class of

goods may continue, and while the price may be somewhat higher, the quality of the goods will not vary.

#### **COTTON SEED MEAL.**

The price paid for seed, and the fluctuating price of meal, as well as the quality of seed, have been responsible for the low grade meal which has been so prevalent during the past year. For a while many of the mills were manufacturing the standard 36 per cent protein meal and also a low grade meal, showing only 33 per cent, or sometimes as low as 30 per cent protein. The Department realizing this and also that the average feeders do not stop to consider the difference in value of such meal, and were found buying the low grade meal and paying almost as much, and in some cases just as much, as for standard 36 per cent meal, determined to take action in this matter. Therefore, regulations were promulgated by Commissioner E. J. Watson to protect the innocent consumer in such cases, and the manufacturers were notified that "cotton seed meal" when branded as such must contain 36 per cent protein. When found below this standard a rebate was figured by this Department, requiring the manufacturer to make such deficiencies good to the purchaser. This has worked wonderfully well in maintaining a standard of 36 per cent protein for cotton seed meal; a large number of our people who innocently purchased this low grade meal have received rebates for such deficiencies, and the mills have realized the importance of making their meal comply with their guarantee.

#### **MIXED FEED.**

The manufacturers of mixed feeds are at last realizing the importance of using only a good quality of ingredients in such preparations, and in this way the quality of mixed feeds is improving. There is nothing but stop orders, confiscation of goods, and a revocation of registration for the manufacturer who does not give careful attention to the ingredients used in his feed. Therefore, the manufacturers of feed stuffs who have been successful are those who are placing a high grade product on the market, and not trying to use every cheap ingredient to be found and hiding its inferior quality in some mixture. The number of different mixed feeds on the market are becoming enormous, and careful inspection is consequently extremely important.

**RICE FEEDS.**

This class of feed stuffs have been found to conform to the law in almost every respect during the entire year. This goes to show what inspection can do, for only a few years ago the rice feeds on the South Carolina market were, in many cases, not only worthless as a feed but dangerous. Today the rice products sold in our State can be highly recommended as a feed.

**CHICKEN FEEDS.**

There are few violations in this class of feed stuffs, as the particles are usually large enough for the average person to detect any inferior grain present. Then, too, as the whole grain or cracked grain usually constitute this feed, there is little chance for the practice of deception.

**CORN PRODUCTS.**

These are usually a good class of feeds, but owing to difference in the by-products, there is a great variation in their analysis. Therefore, one should be careful in buying such feeds and pay strict attention to the guarantee.

**WHEAT PRODUCTS.**

There are more or less variations in wheat products, due entirely to the amount of bran and middlings present. Except to the experienced eye very little difference, if any, could be detected between two samples of middlings, or two samples of bran, while one sample may be at least 25 per cent better than the other. For this reason the attention of the purchaser is again called to the guaranteed analysis.

**ALFALFA PRODUCTS.**

Alfalfa meal might vary from 12 per cent to 18 per cent protein, and therefore the only safe way to purchase such products is by analysis.

**BET PULP.**

This is one of the products which almost always conform very closely to the guarantee, and no attempts at adulteration have been discovered.

## SAMPLES COLLECTED.

Number of times samples of feed stuffs were collected from the following towns during the year 1916:

|               |    |               |    |
|---------------|----|---------------|----|
| Abbeville     | 10 | Hodges        | 2  |
| Aiken         | 7  | Hardeville    | 2  |
| Anderson      | 15 | Hickory Grove | 2  |
| Bamberg       | 3  | Inman         | 10 |
| Barnwell      | 2  | Iva           | 5  |
| Batesburg     | 8  | Johnston      | 5  |
| Beaufort      | 2  | Jonesville    | 3  |
| Bennettsville | 8  | Kings Creek   | 1  |
| Belton        | 3  | Kershaw       | 7  |
| Bishopville   | 11 | Kingstree     | 3  |
| Blackville    | 1  | Lake City     | 6  |
| Blairs        | 1  | Lancaster     | 9  |
| Baths         | 1  | Landrum       | 4  |
| Bowling Green | 1  | Langley       | 3  |
| Brookland     | 6  | Latta         | 4  |
| Branchville   | 1  | Laurens       | 4  |
| Bradley       | 2  | Leesville     | 6  |
| Blackstock    | 2  | Lexington     | 4  |
| Camden        | 7  | Little River  | 1  |
| Calhoun Falls | 1  | Liberty       | 2  |
| Campobello    | 5  | Lockhart      | 2  |
| Charleston    | 28 | Lowndesville  | 2  |
| Chester       | 8  | Lynchburg     | 2  |
| Chesterfield  | 7  | Manning       | 3  |
| Chappells     | 2  | Marion        | 4  |
| Cheraw        | 2  | McColl        | 6  |
| Chesnee       | 2  | McCormick     | 5  |
| Clinton       | 5  | Mullins       | 7  |
| Clio          | 6  | Monetta       | 2  |
| Clover        | 4  | Modoc         | 1  |
| Conway        | 5  | Marietta      | 1  |
| Columbia      | 22 | Mayesville    | 1  |
| Cowpens       | 3  | Mt. Crogan    | 1  |
| Chapin        | 4  | Mt. Carmel    | 1  |
| Converse      | 2  | Newberry      | 11 |
| Central       | 2  | Nichols       | 1  |
| Carlisle      | 1  | Ninety-Six    | 8  |
| Catawba       | 1  | Novin         | 1  |
| Clearwater    | 1  | North         | 2  |
| Centenary     | 1  | North Augusta | 3  |
| Darlington    | 8  | Norway        | 1  |
| Denmark       | 1  | Norris        | 1  |
| Dillon        | 4  | Ora           | 1  |
| Donalds       | 1  | Orangeburg    | 3  |
| Elloree       | 2  | Pacolet       | 2  |
| Easley        | 4  | Pageland      | 2  |
| Edgefield     | 4  | Patrick       | 1  |
| Fillenton     | 1  | Pelzer        | 9  |
| Elliott       | 1  | Pickens       | 4  |
| Estill        | 2  | Piedmont      | 1  |
| Florence      | 7  | Pendleton     | 3  |
| Fountain Inn  | 4  | Pellon        | 1  |
| Fort Mill     | 3  | Plum Branch   | 3  |
| Fairfax       | 1  | Pomaria       | 2  |
| Fort Motte    | 1  | Port Royal    | 1  |
| Gaffney       | 8  | Prosperity    | 5  |
| Georgetown    | 4  | Richburg      | 2  |
| Glendale      | 1  | Ridge Springs | 3  |
| Greenville    | 13 | Ridgeway      | 4  |
| Greenwood     | 20 | Ridgeland     | 2  |
| Greer         | 4  | Rock Hill     | 9  |
| Goldville     | 1  | Rowesville    | 1  |
| Great Falls   | 2  | Saluda        | 8  |
| Greeleyville  | 1  | Seneca        | 8  |
| Garnett       | 1  | Simpsonville  | 2  |
| Gray Court    | 1  | Society Hill  | 2  |
| Hartsville    | 4  | Spartanburg   | 22 |
| Heath Springs | 7  | St. Matthews  | 6  |
| Honea Path    | 2  | St. Paul      | 1  |

|                      |    |                   |    |
|----------------------|----|-------------------|----|
| Starr .....          | 1  | Verdery .....     | 1  |
| Summerville .....    | 2  | Varnville .....   | 1  |
| Sumter .....         | 16 |                   |    |
| Swansea .....        | 2  | Wagener .....     | 3  |
| Silverstreet .....   | 1  | Ware Shoals ..... | 2  |
| Springfield .....    | 4  | Walhalla .....    | 7  |
| Smoaks .....         | 1  | Walterboro .....  | 4  |
| Sandy Springs .....  | 2  | Waterloo .....    | 10 |
| Sharon .....         | 3  | Westminster ..... | 1  |
| Scranton .....       | 1  | West Union .....  | 1  |
| Smyrna .....         | 1  | Williamston ..... | 4  |
|                      |    | Williston .....   | 2  |
| Taylor .....         | 3  | Wilmington .....  | 4  |
| Tatum .....          | 1  | Winnsboro .....   | 7  |
| Timmons ville .....  | 3  | Woodruff .....    | 3  |
| Travelers Rest ..... | 1  | Woodward .....    | 1  |
| Troy .....           | 2  |                   |    |
| Tucapau .....        | 4  | York .....        | 7  |
|                      |    | Yemassee .....    | 2  |
| Union .....          | 7  |                   |    |

### THE MANUFACTURERS.

Number of samples of feed stuffs taken from the following manufacturers during the year 1916:

|  | Total. | Good. | Deficient. |
|--|--------|-------|------------|
| Atlanta Milling Co., Atlanta, Ga.....              | 17     | 11    | 6          |
| Adlsh Milling Co., Columbia, S. C.....             | 40     | 15    | 25         |
| American Milling Co., Peoria, Ill.....             | 8      | 1     | 2          |
| Alfocorn Milling Co., East St. Louis, Ill.....     | 13     | 10    | 3          |
| Acme Milling Co., Talbott, Tenn.....               | 7      | 1     | 6          |
| Adler Export Co., New Orleans, La.....             | 7      | 5     | 2          |
| American Hominy Co., Indianapolis, Ind.....        | 5      | 4     | 1          |
| Aunt Patsy Poultry Feed Co., Memphis, Tenn.....    | 9      | 7     | 2          |
| Augusta Oil Mill, Augusta, Ga.....                 | 1      | 0     | 1          |
| Aikin Erskin Milling Co., Evansville, Ind.....     | 1      | 1     | 0          |
| Alco Feed Mills, Atlanta, Ga.....                  | 2      | 0     | 2          |
| American Feed Milling Co., Asheville, N. C.....    | 3      | 1     | 2          |
| Albemarle Milling Co., Albemarle, N. C.....        | 1      | 0     | 1          |
| Acme Evans Co., Indianapolis, Ind.....             | 1      | 0     | 1          |
| Addison Mills, Edgefield, S. C.....                | 2      | 1     | 1          |
| Bay State Milling Co., Winona, Minn.....           | 3      | 1     | 2          |
| Ballard & Ballard, Louisville, Ky.....             | 5      | 1     | 4          |
| Blue Ridge Cotton Oil Co., Travelers Rest, S. C... | 1      | 0     | 1          |
| Bailey Distributing Co., Columbia, S. C.....       | 2      | 2     | 0          |
| Bliss Milling Co., Seymour, Ind.....               | 4      | 0     | 4          |
| Bingham & Sons, Augusta, Ga.....                   | 1      | 0     | 1          |
| Boney & Harper, Wilmington, N. C.....              | 1      | 0     | 1          |
| Buckeye Cotton Oil Co., Augusta, Ga.....           | 11     | 4     | 7          |
| Burnett-Craft, Kaufman Milling Co., St. Louis, Mo. | 2      | 2     | 0          |
| Buckeye Cotton Oil Co., Charlotte, N. C.....       | 3      | 1     | 2          |
| Buckeye Cotton Oil Co., Cincinnati, Ohio.....      | 2      | 1     | 1          |
| Barrett Denton Lyma, Dalton, Ga.....               | 1      | 0     | 1          |
| Brocker, Chas., Owensboro, Ky.....                 | 1      | 0     | 1          |
| Baltic Mills, Vincennes, Ind.....                  | 1      | 0     | 1          |
| Bamberg Bros., Baltimore, Md.....                  | 1      | 0     | 1          |
| Boyd & Co., Frederick, Charleston, S. C.....       | 3      | 1     | 2          |
| Corno Mills, St. Louis, Mo.....                    | 40     | 14    | 26         |
| Clark Milling Co., Augusta, Ga.....                | 11     | 6     | 5          |
| Cairo Milling Co., Cairo, Ill.....                 | 24     | 11    | 13         |
| Clarendon Cotton Oil Co., St. Paul, S. C.....      | 1      | 0     | 1          |
| Campobello Oil Mill, Campobello, S. C.....         | 7      | 5     | 2          |
| Clauss, A. T., Charleston, S. C.....               | 1      | 1     | 0          |
| Coronaca Oil Mill, Coronaca, S. C.....             | 1      | 0     | 1          |
| Cyphers Incubator Co., Buffalo, N. Y.....          | 9      | 6     | 3          |
| Chesnee Oil Mill, Chesnee, S. C.....               | 1      | 0     | 1          |
| Columbia Grain Co., Nashville, Tenn.....           | 3      | 1     | 2          |
| Cotton Seed & Fertilizer Co., Macon, Ga.....       | 2      | 0     | 2          |
| Chamberlain & Co., F. B., St. Louis, Mo.....       | 1      | 1     | 0          |
| Clio Oil & Fertilizer Co., Clio, S. C.....         | 1      | 0     | 1          |
| Cook, L. P., Memphis, Tenn.....                    | 2      | 0     | 2          |
| Central Elevator Co., Memphis, Tenn.....           | 2      | 2     | 0          |
| David Scott Flour Mill Co., Detroit, Mich.....     | 2      | 1     | 1          |
| Dankey-Walker Milling Co., Union City, Tenn.....   | 1      | 0     | 1          |
| Dold, Jacob Packing Co., Buffalo, N. Y.....        | 1      | 0     | 1          |
| Dunlop Mills, Richmond, Va.....                    | 9      | 7     | 2          |

|  | Total. | Good. | Deficient. |
|--|--------|-------|------------|
| Dunlop Milling Co., Clarksville, Tenn.....               | 6      | 0     | 6          |
| Dan Valley Mills, Danville, Va.....                      | 3      | 0     | 3          |
| Dickinson Co., Albert, Chicago, Ill.....                 | 11     | 10    | 1          |
| Domestic Flour Mills, Kansas City, Mo.....               | 3      | 0     | 3          |
| Dewey Bros., Blanchester, Ohio.....                      | 2      | 1     | 1          |
| Darling & Co., Chicago, Ill.....                         | 1      | 0     | 1          |
| Early & Daniels Co., Cincinnati, Ohio.....               | 4      | 2     | 2          |
| Eagle Roller Mills, Greenville, S. C.....                | 4      | 3     | 1          |
| Edinger & Co., Louisville, Ky.....                       | 4      | 3     | 1          |
| Empire Rice Mill Co., New Orleans, La.....               | 10     | 9     | 1          |
| Eckhart Mill Co., B. A., Chicago, Ill.....               | 4      | 3     | 1          |
| Eagle Roller Mill Co., New Ulm, Minn.....                | 1      | 1     | 0          |
| Excello Milling Co., St. Joseph, Mo.....                 | 2      | 2     | 0          |
| Elberton Oil Mills, Elberton, Ga.....                    | 2      | 2     | 0          |
| Eschelman, J. W., Lancaster, Pa.....                     | 1      | 0     | 1          |
| Edison Cotton Oil Co., Edison, Ga.....                   | 1      | 0     | 1          |
| Florida Cotton Oil Co., Jacksonville, Fla.....           | 2      | 1     | 1          |
| Farmers Oil Mill, Newberry, S. C.....                    | 2      | 1     | 1          |
| Frazier Grain Co., A. C., Atlanta, Ga.....               | 9      | 0     | 9          |
| Fountain Inn Oil Mill Co., Fountain Inn, S. C.....       | 1      | 0     | 1          |
| Farmers Oil Mill, Anderson, S. C.....                    | 1      | 0     | 1          |
| Finucan, T. M., Summerville, S. C.....                   | 1      | 1     | 0          |
| Fountain City Mill & Elevator Co., Augusta, Ga.....      | 1      | 1     | 0          |
| Gateway Milling Co., Kansas City, Mo.....                | 5      | 2     | 3          |
| Gambrell Mfg. Co., C. A., Baltimore, Md.....             | 2      | 0     | 2          |
| Gignilliat & Co., Seneca, S. C.....                      | 4      | 3     | 1          |
| Golden Grain Co., East St. Louis, Mo.....                | 6      | 3     | 3          |
| Gibbons, J. T., New Orleans, La.....                     | 9      | 7     | 2          |
| Greensboro Roller Mills, Greensboro, N. C.....           | 2      | 0     | 2          |
| Hartsville Cotton Oil Co., Hartsville, S. C.....         | 2      | 1     | 1          |
| Hecker-Jones-Jewell Milling Co., New York City.....      | 4      | 3     | 1          |
| Haliday Milling Co., H. L., Cairo, Ill.....              | 9      | 5     | 4          |
| Howell Grain & Feed Co., Union City, Tenn.....           | 3      | 1     | 2          |
| Hopkinsville Milling Co., Hopkinsville, Ky.....          | 2      | 1     | 1          |
| Highland Park Mfg. Co., Rock Hill, S. C.....             | 2      | 2     | 0          |
| Hodgson Oil Refining Co., Athens, Ga.....                | 1      | 1     | 0          |
| Hax, G. A., Baltimore, Md.....                           | 4      | 1     | 3          |
| Illinois Feed Mills, St. Louis, Mo.....                  | 4      | 1     | 3          |
| International Sugar Feed Co., No. 2., Memphis, Tenn..... | 12     | 8     | 4          |
| Iglehart Bros., Evansville, Ind.....                     | 6      | 0     | 6          |
| Indiana Milling Co., Terre Haute, Ind.....               | 3      | 0     | 3          |
| Interstate Milling Co., Charlotte, N. C.....             | 6      | 1     | 5          |
| Just Mills, Nashville, Tenn.....                         | 48     | 15    | 28         |
| Jonesville Oil Mill, Jonesville, S. C.....               | 2      | 0     | 2          |
| Kershaw Oil Mill, Kershaw, S. C.....                     | 4      | 4     | 0          |
| Kemper Mill & Elevator Co., Kansas City, Mo.....         | 5      | 3     | 2          |
| Koehler Flour Mills, St. Louis, Mo.....                  | 12     | 5     | 7          |
| Kirkland Distributing Co., Columbia, S. C.....           | 3      | 1     | 2          |
| Lake Charles Rice Milling Co., Lake Charles, La...       | 1      | 0     | 1          |
| Lancaster Cotton Oil Co., Lancaster, S. C.....           | 8      | 1     | 7          |
| Lynchburg Milling Co., Lynchburg, Va.....                | 2      | 1     | 1          |
| Leesville Oil Mill, Leesville, S. C.....                 | 1      | 0     | 1          |
| Larowe Milling Co., Detroit, Mich.....                   | 9      | 4     | 5          |
| Liberty Mills, Nashville, Tenn.....                      | 7      | 2     | 5          |
| Louisiana State Rice Milling Co., New Orleans, La.....   | 24     | 19    | 5          |
| Lexington Roller Mills, Lexington, Ky.....               | 1      | 0     | 1          |
| Louisiana Grain & Milling Co., Lake Charles, La...       | 3      | 3     | 0          |
| Lord Milling Co., Wamego, Ohio.....                      | 1      | 1     | 0          |
| Mayo Milling Co., Richmond, Va.....                      | 7      | 4     | 3          |
| Matthews & Sons, G. B., New Orleans, La.....             | 8      | 4     | 4          |
| Memphis Cotton, Hull & Fiber Co., Memphis, Tenn.....     | 2      | 0     | 2          |
| Memphis Milling Co., Memphis, Tenn.....                  | 5      | 1     | 4          |
| Middle Tennessee Milling Co., Tullahoma, Tenn.....       | 5      | 4     | 1          |
| Morgan & Co., Edgar, Memphis, Tenn.....                  | 20     | 13    | 7          |
| Morristown Flour Mills, Morristown, Tenn.....            | 8      | 7     | 1          |
| Molony & Carter Co., Charleston, S. C.....               | 41     | 24    | 17         |
| Mountain City Mill Co., Chattanooga, Tenn.....           | 23     | 13    | 10         |
| Mountain City Milling Co., Greenville, S. C.....         | 1      | 1     | 0          |
| Model Mill Co., Johnson City, Tenn.....                  | 18     | 6     | 12         |
| Marshall Milling Co., Minneapolis, Minn.....             | 4      | 0     | 4          |
| McGowan-Benet Milling Co., Georgiana, Ala.....           | 3      | 0     | 3          |
| McNair Milling Co., Laurinburg, N. C.....                | 5      | 0     | 5          |
| Mixson Seed Co., Charleston, S. C.....                   | 2      | 0     | 2          |
| Mount Ulla Roller Mills, Mt. Ulla, N. C.....             | 1      | 0     | 1          |

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Marco Mills, Pine Bluff, Ark.....                 | 8      | 2     | 6          |
| Monarch Grain & Milling Co., Nashville, Tenn....  | 3      | 2     | 1          |
| Manning Oil Mill, Manning, S. C.....              | 2      | 1     | 1          |
| Michigan Sugar Co.....                            | 1      | 1     | 0          |
| Morris & Co., East St. Louis, Mo.....             | 1      | 1     | 0          |
| Merchants Mill Co., Montgomery, Ala.....          | 1      | 1     | 0          |
| National Oats Co., St. Louis, Mo.....             | 1      | 0     | 1          |
| National Milling Co., Macon, Ga.....              | 52     | 27    | 25         |
| Newport Mill Co., Newport, Tenn.....              | 5      | 1     | 4          |
| Ninety-Six Oil Mill, Ninety-Six, S. C.....        | 2      | 1     | 1          |
| New Prague Milling Co., New Prague, Minn.....     | 3      | 0     | 3          |
| Nutriline Milling Co., Crowley, La.....           | 8      | 4     | 4          |
| Newton Roller Mill Co., Newton, N. C.....         | 1      | 0     | 1          |
| Newport Mill Co., Loudon, Tenn.....               | 1      | 0     | 0          |
| National Feed Co., St. Louis, Mo.....             | 1      | 0     | 0          |
| Omaha Alfalfa Milling Co., Omaha, Neb.....        | 11     | 5     | 6          |
| Oswego Milling Co., Oswego, N. Y.....             | 1      | 1     | 0          |
| Oglesby Grocery Co., Atlanta, Ga.....             | 2      | 1     | 1          |
| Patterson & Co., G. E., Memphis, Tenn.....        | 10     | 3     | 7          |
| Peter's Mill Co., M. C., Omaha, Neb.....          | 13     | 12    | 1          |
| Pritchard & Co., W. R., Charleston, S. C.....     | 10     | 6     | 4          |
| Peoples Oil Co., Johnston, S. C.....              | 2      | 1     | 1          |
| Pope, Chas., Riverdale, Ill.....                  | 2      | 1     | 1          |
| Piedmont Mills, Lynchburg, Va.....                | 5      | 1     | 4          |
| Pearlstone Sons, I. M., Charleston, S. C.....     | 5      | 3     | 2          |
| Pickens Oil Mill, Pickens, S. C.....              | 2      | 0     | 0          |
| Phoenix Flour Mill Co., Evansville, Ind.....      | 2      | 0     | 2          |
| Pendleton Oil Mill, Pendleton, S. C.....          | 1      | 1     | 1          |
| Purina Mills, St. Louis, Mo.....                  | 14     | 4     | 10         |
| Park and Pollard Co., Boston, Mass.....           | 5      | 4     | 1          |
| Peoples Oil & Fertilizer Co., Anderson, S. C..... | 1      | 0     | 1          |
| Palmetto Oil Co., Bishopville, S. C.....          | 1      | 1     | 0          |
| Peas-Moore Milling Co., West Plains, Mo.....      | 1      | 0     | 1          |
| Quaker Oats Co., Chicago, Ill.....                | 28     | 10    | 18         |
| Ralston Purina Co., St. Louis, Mo.....            | 11     | 5     | 6          |
| Rapier Sugar Feed Co., Owensboro, Ky.....         | 10     | 1     | 9          |
| Rich Hill Oil Mill Co., White Stone, S. C.....    | 1      | 0     | 1          |
| Rowesville Oil Mill, Rowesville, S. C.....        | 1      | 1     | 0          |
| Ruby Roller Mills, Ruby, S. C.....                | 1      | 0     | 1          |
| Rex Mill & Feed Co., Nashville, Tenn.....         | 1      | 0     | 1          |
| Southern Rice Milling Co., New Orleans, La.....   | 1      | 0     | 1          |
| Southern Cotton Oil Co., Chester, S. C.....       | 2      | 1     | 1          |
| Southern Cotton Oil Co., Abbeville, S. C.....     | 1      | 0     | 1          |
| Southern Cotton Oil Co., Bennettsville, S. C..... | 1      | 1     | 0          |
| Southern Cotton Oil Co., Greenwood, S. C.....     | 5      | 2     | 3          |
| Southern Cotton Oil Co., Spartanburg, S. C.....   | 6      | 2     | 4          |
| Southern Cotton Oil Co., Laurens, S. C.....       | 1      | 1     | 0          |
| Southern Cotton Oil Co., Winnsboro, S. C.....     | 1      | 1     | 0          |
| Southern Cotton Oil Co., Charlotte, N. C.....     | 1      | 0     | 1          |
| Southern Cotton Oil Co., Union, S. C.....         | 2      | 0     | 2          |
| Southern Cotton Oil Co., Charleston, S. C.....    | 1      | 1     | 0          |
| Southern Cotton Oil Co., Newberry, S. C.....      | 2      | 1     | 1          |
| Southern Cotton Oil Co., Columbia, S. C.....      | 1      | 1     | 0          |
| Southern Cotton Oil Co., Augusta, Ga.....         | 5      | 4     | 1          |
| Sea Island Cotton Oil Co., Charleston, S. C.....  | 19     | 11    | 8          |
| Schmanck Grain Co., C. L., Charleston, S. C.....  | 1      | 0     | 1          |
| Seesbeck's Sons, J. H., Charleston, S. C.....     | 3      | 3     | 0          |
| Seneca Oil Mill, Seneca, S. C.....                | 1      | 1     | 0          |
| Scarlett, Wm. J., Baltimore, Md.....              | 1      | 0     | 1          |
| Shelton Mills, Chattanooga, Tenn.....             | 3      | 2     | 1          |
| Statesville Flour Mills, Statesville, N. C.....   | 5      | 0     | 5          |
| Smith & Co., J. Allen, Knoxville, Tenn.....       | 6      | 4     | 2          |
| Southwestern Milling Co., Kansas City, Mo.....    | 14     | 8     | 6          |
| Superior Feed Co., Memphis, Tenn.....             | 3      | 1     | 2          |
| Standard Feed Mills, Memphis, Tenn.....           | 7      | 2     | 5          |
| Spartan Grain & Mill Co., Spartanburg, S. C.....  | 14     | 5     | 9          |
| Swift & Co., Oil Mill, Columbia, S. C.....        | 5      | 0     | 5          |
| Star & Crescent Milling Co., Chicago, Ill.....    | 7      | 3     | 4          |
| Spring City Milling Co., Huntsville, Ala.....     | 1      | 1     | 0          |
| Shawnee Milling Co., Shawnee, Okla.....           | 2      | 0     | 2          |
| Saginaw Milling Co., Saginaw, Mich.....           | 1      | 0     | 1          |
| Southern Feed Co., Newport News, Va.....          | 2      | 0     | 2          |
| Savannah Milling Co., Savannah, Ga.....           | 3      | 1     | 2          |
| Sessions Grocery Co., Andalusia, Ala.....         | 1      | 0     | 1          |
| Swift & Co., Oil Mill, Atlanta, Ga.....           | 1      | 0     | 1          |
| Star Mills, Nashville, Tenn.....                  | 2      | 1     | 1          |
| Seaboard Feed & Produce Co., Henderson, N. C..... | 7      | 3     | 4          |

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Scott County Milling Co., Sikeston, Mo.....         | 1      | 1     | 0          |
| Southern States Grain & Feed Co., Nashville, Tenn.. | 5      | 1     | 4          |
| Southern Milling Co., Nashville, Tenn.....          | 7      | 2     | 5          |
| Savannah Oil Mills, Savannah, Ga.....               | 1      | 1     | 0          |
| Tennessee Fibre Co., Memphis, Tenn.....             | 6      | 1     | 5          |
| Tyger Shoal Milling Co., Welford, S. C.....         | 1      | 1     | 0          |
| Trippett, J. I., Woodstock, Va.....                 | 1      | 0     | 1          |
| Timmons Oil Mill.....                               | 1      | 0     | 1          |
| The Cotton Oil Co., Bamberg, S. C.....              | 1      | 1     | 0          |
| Trenholm, Ralph Co., Memphis, Tenn.....             | 1      | 1     | 0          |
| Town Creek Milling Co., Lenoir City, Tenn.....      | 1      | 0     | 1          |
| Universal Oil Co., Wilmington, N. C.....            | 3      | 0     | 3          |
| Union Seed & Fertilizer Co., Columbia, S. C.....    | 10     | 2     | 8          |
| Union Seed & Fertilizer Co., Greenville, S. C.....  | 12     | 2     | 10         |
| Union Seed & Fertilizer Co., Augusta, Ga.....       | 1      | 1     | 0          |
| Union Seed & Fertilizer Co., Atlanta, Ga.....       | 1      | 0     | 1          |
| Union Seed & Fertilizer Co., Macon, Ga.....         | 1      | 1     | 0          |
| Union Warehouse & Elevator Co., Nashville, Tenn..   | 3      | 0     | 3          |
| Victor Cotton Oil Co., Gaffney, S. C.....           | 2      | 1     | 1          |
| Viola H., Charleston, S. C.....                     | 2      | 2     | 0          |
| Van Iderstine Co., Long Island, N. Y.....           | 1      | 0     | 1          |
| Van Leumen Co., Covington, Ky.....                  | 1      | 0     | 1          |
| Washburn Crosby Co., Minneapolis, Minn.....         | 1      | 1     | 0          |
| Wade & Sons, John, Memphis, Tenn.....               | 11     | 6     | 5          |
| West Point Oil Mill, Charleston, S. C.....          | 1      | 0     | 1          |
| Wilkes & Co., J. H., Nashville, Tenn.....           | 9      | 1     | 8          |
| Welters, E. F. A., Charleston, S. C.....            | 1      | 1     | 0          |
| Willmont Oil Mills, Pelser, S. C.....               | 3      | 1     | 2          |
| Wood & Sons, T. W., Richmond, Va.....               | 1      | 0     | 1          |
| Wood-Stubbs Co., Louisville, Ky.....                | 2      | 0     | 2          |
| Wise, Jno. D., Yellow Springs, Ohio.....            | 1      | 0     | 1          |
| Wohltmann & Co., John, Charleston, S. C.....        | 1      | 0     | 1          |
| Weathers Feed & Grist Mill Co., Georgiana, Ala..    | 2      | 0     | 2          |
| Woodruff Oil & Fertilizer Co., Woodruff, S. C.....  | 1      | 0     | 1          |
| Watson & Co., W. A., Greensboro, N. C.....          | 1      | 0     | 1          |
| Western Flour Mills, Davenport, Iowa.....           | 1      | 0     | 1          |
| Wash Co., Alfalfa Milling Co., Fort Calhoun, Okla.  | 1      | 0     | 1          |
| Yerxa-Andrews-Thurston, Minneapolis, Minn.....      | 3      | 2     | 1          |

#### Manufacturers Having Samples Without Guarantee Stated.

|   | No. of Samples. |
|---|-----------------|
| Augusta Grocery Co., Augusta, Ga.....                   | 2               |
| Alco Feed Mills, Atlanta, Ga.....                       | 2               |
| Blamberg Bros., Baltimore, Md.....                      | 1               |
| Bringham & Sons, McCormick, S. C.....                   | 1               |
| Buckeye Cotton Oil Co., Charlotte, N. C.....            | 2               |
| Buckeye Cotton Oil Co., Augusta, Ga.....                | 2               |
| Blooms Sons, New Orleans, La.....                       | 3               |
| Calhoun, A. L., Cllo, S. C.....                         | 1               |
| Clark Milling Co., Augusta, Ga.....                     | 1               |
| Coronaca Oil Mill, Coronaca, S. C.....                  | 1               |
| Hodgson Oil Refining Co., Athens, Ga.....               | 1               |
| Hasenwinkle & Co., H. J., Memphis, Tenn.....            | 1               |
| Hattaway & Co., Spartanburg, S. C.....                  | 1               |
| International Sugar Feed Co., No. 2, Memphis, Tenn..... | 1               |
| Lancaster Cotton Oil Co., Lancaster, S. C.....          | 2               |
| Leesville Oil Mill, Leesville, S. C.....                | 3               |
| Mountain City Milling Co., Greenville, S. C.....        | 2               |
| Marion, W. R., White Hall, S. C.....                    | 1               |
| Matthews & Sons, G. B., New Orleans, La.....            | 1               |
| Morgan & Co., Memphis, Tenn.....                        | 1               |
| National Milling Co., Macon, Ga.....                    | 2               |



|  | No. of Samples. |
|--|-----------------|
| Patterson & Co., G. E., Memphis, Tenn.....       | 1               |
| Rhyme Roller Mills, Gastonia, N. C.....          | 1               |
| Scarlett & Co., Wm. G., Baltimore, Md.....       | 1               |
| Spring City Mill Co., Huntsville, Ala.....       | 1               |
| Spartan Grain & Mill Co., Spartanburg, S. C..... | 1               |
| Southern Cotton Oil Co., Spartanburg, S. C.....  | 1               |
| Southwestern Milling Co., Kansas City, Mo.....   | 1               |
| Tate, W. R., Nashville, Tenn.....                | 1               |
| Wilmington Oil Mills, Pelser, S. C.....          | 1               |
| Wright Milling Co., Blue Field, W. Va.....       | 1               |
| Wade & Sons, J. W., Memphis, Tenn.....           | 1               |
| Wood Stubbs & Co., Louisville, Ky.....           | 3               |
| Wood & Sons, T. W., Richmond, Va.....            | 1               |

#### Manufacturers Having Samples Without Carbohydrates Stated.

|   |   |
|---|---|
| Baltic Mills, Vincennes, Ind.....                   | 1 |
| Bliss Milling Co., Seymour, Ind.....                | 4 |
| Buckeye Cotton Oil Co., Charlotte, N. C.....        | 1 |
| Cotton States Feed & Fertilizer Co., Macon, Ga..... | 1 |
| Dold Jacob Packing Co., Buffalo, N. Y.....          | 1 |
| Douglas Co., Cedar Rapids, Iowa.....                | 1 |
| Edison Oil Mills, Edison, Ga.....                   | 1 |
| Greensboro Roller Mills, Greensboro, N. C.....      | 1 |
| Hax, G. A., Baltimore, Md.....                      | 1 |
| Igleheart Bros., Evansville, Ind.....               | 2 |
| Indiana Milling Co., Terre Haute, Ind.....          | 2 |
| Lynchburg Milling Co., Lynchburg, Va.....           | 1 |
| Mount Ulla Roller Mills, Mt. Ulla, N. C.....        | 1 |
| Marshall Milling Co.....                            | 4 |
| Memphis Milling Co., Memphis, Tenn.....             | 3 |
| Morris & Co., East St. Louis, Mo.....               | 1 |
| Mayo Milling Co., Richmond, Va.....                 | 1 |
| Newton Roller Mills, Newton, N. C.....              | 1 |
| Southern Rice Milling Co., New Orleans, La.....     | 1 |
| Southern Cotton Oil Co., Charlotte, N. C.....       | 1 |
| Star & Crescent Milling Co., Chicago, Ill.....      | 2 |
| Town Creek Milling Co., Lenoir City, Tenn.....      | 1 |
| White Star Mills, Stanton, Va.....                  | 1 |

#### SUMMARY OF ANALYSIS OF FEED STUFFS FOR YEAR 1916.

##### FEED STUFFS.

|   |       |
|---|-------|
| Total number official samples analyzed..... | 1,227 |
| Total number found above guarantee.....     | 514   |
| Total number found below guarantee.....     | 713   |
| Number below guarantee in protein.....      | 317   |
| Number below guarantee in fat.....          | 267   |

|   |     |
|---|-----|
| Number above guarantee in fiber.....                            | 346 |
| Number below guarantee in protein and fat.....                  | 53  |
| Number below guarantee in protein and above in fiber.....       | 100 |
| Number below guarantee in fat and above in fiber.....           | 49  |
| Number below guarantee in protein, fat and above in fiber.....  | 41  |
| Number below guarantee in carbohydrates.....                    | 9   |
| Number below guarantee in fat and carbohydrates.....            | 3   |
| Number below guarantee in carbohydrates and above in fiber..... | 2   |
| Not guaranteed .....  | 47  |
| Carbohydrates not stated.....                                   | 44  |

### SUMMARY OF DIFFERENT FEEDS ANALYZED YEAR 1916.

#### MIXED FEEDS.

|   |     |
|---|-----|
| Total number of samples analyzed.....                           | 555 |
| Total number of samples up to guarantee.....                    | 220 |
| Total number of samples below guarantee.....                    | 335 |
| Number below guarantee in protein.....                          | 142 |
| Number below guarantee in fat.....                              | 120 |
| Number above guarantee in fiber.....                            | 192 |
| Number below guarantee in protein and fat.....                  | 28  |
| Number below guarantee in protein and above in fiber.....       | 33  |
| Number below guarantee in fat and above in fiber.....           | 36  |
| Number below guarantee in protein, fat and above in fiber.....  | 22  |
| Number below guarantee in carbohydrates.....                    | 4   |
| Number below guarantee in fat and carbohydrates.....            | 2   |
| Number below guarantee in carbohydrates and above in fiber..... | 1   |

#### ALFALFA PRODUCTS.

|  |   |
|--|---|
| Total number analyzed.....                                     | 9 |
| Total number up to guarantee.....                              | 2 |
| Total number below guarantee.....                              | 7 |
| Number below guarantee in protein.....                         | 3 |
| Number below guarantee in fat.....                             | 1 |
| Number above guarantee in fiber.....                           | 4 |
| Number below guarantee in protein and above in fiber.....      | 2 |
| Number below guarantee in protein, fat and above in fiber..... | 1 |

#### MISCELLANEOUS SAMPLES.

|  |    |
|--|----|
| Total number samples analyzed.....                             | 23 |
| Total number up to guarantee.....                              | 6  |
| Total number below guarantee.....                              | 17 |
| Number below guarantee in protein.....                         | 11 |
| Number below guarantee in fat.....                             | 3  |
| Number above guarantee in fiber.....                           | 14 |
| Number below guarantee in protein and above in fiber.....      | 4  |
| Number below guarantee in fat and above in fiber.....          | 1  |
| Number below guarantee in protein, fat and above in fiber..... | 5  |

#### CHICKEN FEEDS.

|   |     |
|---|-----|
| Total number samples analyzed.....                        | 143 |
| Total number up to guarantee.....                         | 77  |
| Total number below guarantee.....                         | 66  |
| Number below guarantee in protein.....                    | 17  |
| Number below guarantee in fat.....                        | 13  |
| Number above guarantee in fiber.....                      | 12  |
| Number below guarantee in protein and fat.....            | 5   |
| Number below guarantee in fat and above in fiber.....     | 1   |
| Number below guarantee in protein and above in fiber..... | 0   |
| Number below guarantee in carbohydrates.....              | 1   |

**RICE PRODUCTS.**

|  |    |
|--|----|
| Total number analyzed.....                                     | 73 |
| Total number up to guarantee.....                              | 45 |
| Total number below guarantee.....                              | 28 |
| Number below guarantee in protein.....                         | 7  |
| Number below guarantee in fat.....                             | 4  |
| Number above guarantee in fiber.....                           | 7  |
| Number below guarantee in protein and fat.....                 | 0  |
| Number below guarantee in protein and above in fiber.....      | 8  |
| Number below guarantee in fat and above in fiber.....          | 0  |
| Number below guarantee in protein, fat and above in fiber..... | 3  |
| Number below guarantee in carbohydrates.....                   | 0  |

**COTTON SEED MEAL.**

|  |     |
|--|-----|
| Total number samples analyzed.....                             | 219 |
| Total number up to guarantee.....                              | 56  |
| Total number below guarantee.....                              | 163 |
| Number below guarantee in protein.....                         | 71  |
| Number below guarantee in fat.....                             | 15  |
| Number above guarantee in fiber.....                           | 63  |
| Number below guarantee in protein and fat.....                 | 1   |
| Number below guarantee in protein and above in fiber.....      | 42  |
| Number below guarantee in fat and above in fiber.....          | 3   |
| Number below guarantee in protein, fat and above in fiber..... | 9   |
| Number below guarantee in carbohydrates.....                   | 0   |

**WHEAT PRODUCTS.**

|  |     |
|--|-----|
| Total number samples analyzed.....                             | 220 |
| Total number up to guarantee.....                              | 83  |
| Total number below guarantee.....                              | 137 |
| Number below guarantee in protein.....                         | 62  |
| Number below guarantee in fat.....                             | 60  |
| Number above guarantee in fiber.....                           | 43  |
| Number below guarantee in protein and fat.....                 | 19  |
| Number below guarantee in fat and above in fiber.....          | 7   |
| Number below guarantee in protein and above in fiber.....      | 11  |
| Number below guarantee in protein, fat and above in fiber..... | 1   |
| Number below guarantee in carbohydrates.....                   | 4   |
| Number below guarantee in carbohydrates and fat.....           | 1   |

**CORN PRODUCTS.**

|   |    |
|---|----|
| Total number samples analyzed.....                        | 33 |
| Total number up to guarantee.....                         | 19 |
| Total number below guarantee.....                         | 14 |
| Number below guarantee in protein.....                    | 2  |
| Number below guarantee in fat.....                        | 3  |
| Number above guarantee in fiber.....                      | 5  |
| Number below guarantee in protein and fat.....            | 2  |
| Number below guarantee in protein and above in fiber..... | 1  |
| Number below guarantee in fat and above in fiber.....     | 0  |
| Number below guarantee in protein, fat, and fiber.....    | 1  |

**PEANUT PRODUCTS.**

|  |    |
|--|----|
| Total number samples analyzed.....     | 11 |
| Total number up to guarantee.....      | 5  |
| Total number below guarantee.....      | 6  |
| Number below guarantee in protein..... | 2  |

|   |   |
|---|---|
| Number below guarantee in fat.....                              | 0 |
| Number above guarantee in fiber.....                            | 5 |
| Number below guarantee in protein and fat.....                  | 0 |
| Number below guarantee in protein and above in fiber.....       | 1 |
| Number below guarantee in fat and above in fiber.....           | 0 |
| Number below guarantee in protein, fat, and above in fiber..... | 0 |
| Number below guarantee in carbohydrates.....                    | 0 |

#### **SPECIAL SAMPLES OF FEED STUFFS.**

|                            |    |
|----------------------------|----|
| Total number analyzed..... | 62 |
|----------------------------|----|

Respectfully submitted,  
A. C. SUMMERS,  
Chief Chemist.

#### **CHIEF INSPECTOR'S REPORT.**

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.*

Dear Sir: It is with a sense of gratification that I am enabled to submit to you at the end of the seventh year of concentrated commercial feed stuffs inspection, this, my annual report of the accomplishments of the feed stuffs inspectors for the year.

The general conditions caused by the present war in foreign countries has shot the prices of practically all commodities sky high, consequently the manufacturers of some concentrated commercial feed stuffs have attempted to keep the prices of their products down by attempting to mix with an inferior or cheaper article. The inspectors anticipating the probability of this move, have kept on the alert with eyes and ears open. The results of this alertness on their part is clearly shown by the results obtained.

In order to bring out just how the work of this branch of the Department is looked upon by others, the writer desires to call attention to a few of the comments heard in the course of the year. At a recent visit to this Department by the Chief of the Eastern District, United States Food and Drug Inspection, he informed us that he desired to congratulate us on our work, saying that he heard echoes everywhere he went from manufacturers and salesmen that South Carolina was one State that insisted upon one and all living up to their guarantee. One of the Federal Inspectors, at a visit in the middle of the year, who had not been in this territory in several years, kindly testified that he could tell the difference as soon as he crossed in this State

by the examination of grains and products. The above, with favorable comments by dealers and consumers in all parts of the State, makes the writer feel that this Department and the Inspectors are at least wide awake and are accomplishing what was contemplated by the laws.

#### **CORN AND BY-PRODUCTS.**

As compared with past years there has been a decided improvement in the whole grain corn offered in the open markets of the State. Only on rare occasions have the inspectors found corn which would apparently fall below the standards as required in this State.

While the whole grain corn situation has been much improved, we regret to note that some few manufacturers have again attempted to dispose of their damaged corn by grinding into meal. The inspectors watching out for this, were enabled to find a great deal of this deteriorated corn meal in the various stores of the State. In each case samples were collected, stop orders placed and upon the report of the Chemist, showing high acidity, the meal was handled in the usual manner by being seized and destroyed or allowed to be shipped out of the State upon the filing of a duplicate bill of lading with the Department.

#### **OATS AND OAT MIXTURES.**

An unusual amount of misbranded and adulterated mixtures invoiced as "Oats" or "Feed Oats" have been found on the open markets this year. This class of product usually has added to it shriveled wheat, unfilled or light barley, moldy corn, weed seed, and trash and dirt. Under the laws of both the State and the United States, these mixtures must be tagged and labeled "Oats and Barley," "Oats and Wheat Screenings" or "Oats and Screenings." Under the State law the product is required to be registered with this Department as a commercial feed stuff, tagged showing the guaranteed analysis for Protein, Fat, Fibre and Carbohydrates as well as showing clearly the ingredients, tax stamped and placed in bags to conform to the weights of the commercial feed stuffs law.

When such adulterated products were found by the inspectors stop orders were promptly issued, preventing the sale or delivery. On the small shipments the State promptly seized and destroyed.

On ten large shipments the Department, in order to punish the shippers more severely, used their commission as Federal Inspectors and handled the cases in the United States Courts. In each case seizures were made and criminal prosecution was recommended to the United States Bureau of Chemistry.

#### **MIXED FEEDS.**

This class of products, composed of the by-products of several of the grains mixed together, has been a source of considerable trouble. It is well-nigh impossible for one to detect with the naked eye just what the mixture is constituted of, or whether it will come up to the guaranteed analysis. The inspectors have collected many samples and submitted to the laboratory for chemical analysis as well as microscopical examination. Upon the report of the Chemist showing the product to fall below the guaranteed analysis, or is composed of inferior or damaged products, the goods are promptly seized and destroyed, or allowed to be shipped out of the State, at the discretion of the Commissioner, upon payment of costs of inspection.

#### **COTTON SEED MEAL.**

With the increasing demand and high prices paid for linters to be used in making war munitions, the cotton seed oil mills have been delinting the cotton seeds more closely than ever before. In doing this and abstracting as much oil out of the seed as possible, many of the oil mills have failed to maintain the guarantee of their "Cotton Seed Meal." From the first samples collected by the inspectors at the beginning of the year an insight of this condition was revealed, consequently they immediately began an active campaign and collected many samples at the oil mill plants as well as at the stores. Whenever meal was found to fall below the guaranteed analysis the Department, as in the past, compelled the manufacturer to refund to the purchaser the actual difference in feed value in dollars and cents between what was guaranteed and what was actually found by the laboratory. Upon looking over these refunds we find that the sum of three hundred and eighteen dollars and forty-five cents was rebated to the purchaser during the year.

From a close study of the sale of cotton seed meal for feed purposes, and the steady increase of the oil mills in placing on the markets a low grade feed meal, finding that many consumers

were through their ignorance of feed unit terms being defrauded, you, the Commissioner, very wisely this season promulgated new rules governing the sale of these products. As the regulations now stand, all cotton seed meal with a guarantee of 36 per cent. must be sold as cotton seed meal. All low-grade meal guaranteed below 36 per cent. protein must be registered and labeled as a mixed feed. The words "Cotton," "Cotton Seed," "Cotton Seed Meal," and "Meal" are no longer permitted with this class of product. With this new ruling the inspectors are confident that much of this fraud will be stopped, and the consumers in the State will be saved a large sum of money.

#### **SHORT WEIGHTS.**

Despite the past activities on the part of the inspectors in weighing such products as flour, corn meal and feeds, they have found a good many shipments falling below the stated weight on the packages. In all instances stop orders were promptly placed and the facts presented to you for your attention. I am glad to report that the mills, taking warning, have been considerably more careful in placing full weight packages on the markets of this State.

#### **RESULTS OF INSPECTION.**

I would respectfully call your attention to the digest of actual work accomplished by the feed stuff inspectors for the past year:

|   |        |
|---|--------|
| Number of cities or towns visited.....                      | 2,234  |
| Number of stores inspected.....                             | 12,909 |
| Number of samples of concentrated feed stuffs collected.... | 1,227  |
| Number of samples of whole grain corn collected.....        | 7      |
| Number of samples of feed oats collected.....               | 42     |
| Number of samples of flour collected.....                   | 7      |
| Number of samples of corn meal collected.....               | 391    |

#### **NUMBER STOP ORDERS PLACED.**

|   |     |
|---|-----|
| No South Carolina tax stamps attached.....    | 136 |
| No ingredients named.....                     | 3   |
| Not registered .....                          | 143 |
| Analysis not complete.....                    | 83  |
| Fell below the guaranteed analysis.....       | 86  |
| Guaranteed analysis below State standard..... | 21  |
| Misbranded feeds .....                        | 6   |

|  |    |
|--|----|
| Damaged or decomposed feeds.....           | 6  |
| Short weight feeds.....                    | 7  |
| Whole grain corn below grade No. 5.....    | 1  |
| Corn meal high in acidity.....             | 69 |
| Short weight corn meal.....                | 23 |
| Flour bleached and not so labeled.....     | 3  |
| Flour damaged .....                        | 4  |
| Short weight flour.....                    | 23 |
| Flour not in standard weight packages..... | 31 |
| Oats adulterated with foreign seeds.....   | 22 |

In consequence of the above stop orders the following cases have been carried into the United States Courts by the Commissioner as collaborating United States Food and Drug official, or direct seizures made under the State law:

#### UNITED STATES DISTRICT COURT CASES.

Label: 50 100-pound bags "Pure Wheat Shorts."

Consignor: Southern Milling Co., Nashville, Tenn.

Consignee: A. H. Stevens, Monetta, S. C.

Charge: Adulteration in that the product has an added amount of ground screenings, which is not stated on label.

Recommendation: Criminal prosecution.

---

Label: 20 160-pound bags "Mixed Feed Oats."

Consignor: The Tennessee Grain Co., Nashville, Tenn.

Consignee: J. W. Asbill, Leesville, S. C.

Charge: Adulterated and misbranded in that shriveled wheat, chaff and weed seeds have been added so as to reduce and lower its quality and strength, and substituted in part for oats.

Disposition: Federal seizure ordered.

Recommendation: Criminal prosecution.

---

Label: 20 160-pound bags "Mixed Feed Oats."

Consignor: Mayo Milling Co., Richmond, Va.

Consignee: Lanford-Edwards Co., Woodruff, S. C.

Charge: Adulterated and misbranded in that shriveled wheat, moldy corn, barley, chaff and weed seed, charcoal and charred grains have been added, so as to reduce and lower its quality and strength and substituted in part for oats.

Disposition: Federal seizure.

Recommendation: Criminal prosecution.



**Label:** 100 160-pound bags "Oats."

**Consignor:** The Gillette Grain Co., Nashville, Tenn.

**Consignee:** Strother & Phinney, West Union, S. C.

**Charge:** Adulterated and misbranded in that barley, wheat, chaff and weed seed have been added, so as to reduce its quality and strength, and substituted in part for oats.

**Disposition:** Federal seizure.

**Recommendation:** Criminal prosecution.

---

**Label:** 80 160-pound bags "Oats."

**Consignor:** The Gillette Grain Co., Nashville, Tenn.

**Consignee:** Neville Brothers, West Union, S. C.

**Charge:** Adulterated and misbranded in that barley, wheat, corn, chaff and weed seed have been added so as to reduce its quality and strength and substituted in part for oats.

**Disposition:** Federal seizure.

**Recommendation:** Criminal prosecution.

---

**Label:** 10 160-pound bags "Oats."

**Consignor:** The Tennessee Grain Co., Nashville, Tenn.

**Consignee:** M. L. B. Sturkey, McCormick, S. C.

**Charge:** Adulterated and misbranded in that barley, wheat, chaff and weed seed have been added, so as to reduce its quality and strength and substituted in part for oats.

**Disposition:** State seizure.

**Recommendation:** Criminal prosecution.

---

**Label:** 20 160-pound bags "Mixed Feed Oats."

**Consignor:** The Tennessee Grain Co., Nashville, Tenn.

**Consignee:** Bryson Grocery Co., Nashville, Tenn.

**Charge:** Adulterated and misbranded in that shriveled wheat, barley, weed seed and flax seed have been added, so as to reduce and lower its quality and strength, and substituted in part for oats.

**Disposition:** State seizure.

**Recommendation:** Criminal prosecution.

---

**Label:** 180 160-pound bags "Mixed Feed Oats."

**Consignor:** Chas. D. Jones & Co., Nashville, Tenn.

**Consignee:** J. S. Bowie Co., Abbeville, S. C.

Merchant: A. M. Smith, Abbeville, S. C.

Charge: Adulterated and misbranded in that shriveled wheat, barley, corn and weed seed have been added so as to reduce and lower its quality and strength and substituted in part for oats.

Disposition: Federal seizure.

Recommendation: Criminal prosecution.

---

Label: 100 160-pound bags "W. Oats."

Consignor: J. H. Cofer Co., Norfolk, Va.

Consignee: J. W. Kibler Co., Newberry, S. C.

Charge: Adulterated and misbranded in that oats bleached with sulphur have been mixed and substituted in whole or in part for white oats.

Disposition: Federal seizure.

Recommendation: Criminal prosecution.

---

Label: 150 160-pound bags "White Clipped Oats."

Consignor: Harsh Grain Co., Nashville, Tenn.

Consignee: Springs Bank & Merc. Co., Heath Springs, S. C.

Charge: Adulterated and misbranded in that oats bleached with sulphur have been mixed and substituted in whole or in part for white clipped oats.

Disposition: Federal seizure.

Recommendation: Criminal prosecution.

---

Label: "White Feed Oats."

Consignor: Mayo Milling Co., Richmond, Va.

Consignee: Crosswell & Co., Sumter, S. C.

Charge: Adulterated and misbranded in that light and unfilled barley, shriveled wheat, moldy corn, chaff and weed seed have been added so as to reduce and lower its quality and strength and substituted in part for oats.

Disposition: Case pending.

#### **FEED STUFFS SEIZED AND DESTROYED DURING YEAR 1916.**

Fourteen 100-pound sacks Pure Rice Bran. Manufacturer: Southern Rice Milling Co., New Orleans, La. Merchant: S. J. Link, Abbeville, S. C. Cause: Below guaranteed analysis. No carbohydrates.

Twenty-eight 48-pound sacks Choice Fresh Ground Plain Meal. Manufacturer: Newport Mill Co., Newport, Tenn. Merchant: Joseph Sheehan, Camden, S. C. Cause: Acidity too high.

One 100-pound sack Scratch Feed. Manufacturer: (?) Merchant: J. H. Porter, Ridgeland, S. C. Cause: No tax stamps. No manufacturer.

One 100-pound sack Beet Pulp. Manufacturer: Larrowe Milling Co., Detroit, Mich. Merchant: C. E. Perry, Ridgeland, S. C. Cause: No tax stamps.

Thirty-four 96-pound sacks "Sale Creek Old Style Meal." Manufacturer: Mountain City Mill Co., Chattanooga, Tenn. Merchant: Enterprise Merc. Mill Co., Heath Springs, S. C.

Twenty-four 48-pound and nine 24-pound sacks Water Ground Corn Meal. Manufacturer: Morris & Sheppard, Alexander, N. C. Merchant: N. E. Gentry, Woodruff, S. C. Cause: Acidity too high.

Six 100-pound sacks Star Fort Stock Food. Manufacturer: A. C. Frazier Grain Co., Atlanta, Ga. Merchant: M. P. O. Murray, Ninety Six, S. C. Cause: Below guaranteed analysis.

Three 100-pound sacks Molasses Feed. Manufacturer: E. B. Jenkins, Orangeburg, S. C. Merchant: P. V. Harberson, Ellore, S. C. Cause: No analysis; no stamps.

Five 100-pound sacks Shawnee Brand Poultry Feed. Manufacturer: Wood, Stubbs Co., Louisville, Ky. Merchant: W. J. Reddick, Kingstree, S. C. Cause: No analysis; no tax stamps.

Two 100-pound sacks Chicken Wheat Feed. Manufacturer: T. W. Wood & Sons, Richmond, Va. Merchant: Edwards & Horton, Lancaster, S. C. Cause: Not registered.

Twenty 100-pound sacks None Such Pure Rice Meal. Manufacturer: W. R. Pritchard, Charleston, S. C. Merchant: B. T. Rushing & Co., Estill, S. C. Cause: Damaged and unfit for feed.

Two 100-pound sacks Golden Grain Chick Feed. Manufacturer: Adams Grain & Provision Co., Richmond Va. Merchant: Handy Grocery, Bishopville, S. C. Cause: Incomplete analysis.

Sixty 96-pound sacks Sale Creek Unbolted Meal. Manufacturer: Mountain City Mill Co., Chattanooga, Tenn. Merchant: Lee Wholesale Grocery Co., Bishopville, S. C. Cause: Acidity too high.

Twenty 48-pound sacks Unbolted Meal. Manufacturer: The Van Buren Mills, Nashville, Tenn. Merchant: Langley Mills Store, Langley, S. C. Cause: Acidity high.

Five 100-pound sacks Alco Sweet Feed. Manufacturer: Augusta Grocery Co., Augusta, Ga. Merchant: L. N. Watson, Ridge Spring, S. C. Cause: No guaranteed analysis.

Ten 160-pound sacks Mixed Feed Oats. Manufacturer: Tennessee Grain Company, Nashville, Tenn. Merchant: Carroll & Byers, Gaffney, S. C. Cause: Adulterated.

Three 75-pound sacks Shipstuff. Manufacturer: Rhyne Roller Mills, Gastonia, N. C. Merchant: W. B. Flannagan, Bowling Green, S. C. Cause: No guaranteed analysis; no tax stamp.

Twenty 100-pound sacks Just Grainola Feed. Manufacturer: Just Mills, Nashville, Tenn. Merchant: J. H. C. Seebeck's Sons, Charleston, S. C. Cause: Below guaranteed analysis.

#### CONCLUSION.

I feel much gratified with the success and progress that has been made with the work of inspection this past year. I am glad to be able to report that your inspectors have taken a deep interest in their work, and have always willingly lent their aid in accomplishing whatever other duties the Department has imposed upon them. I esteem it a special privilege to be able to thank you, my Commissioner, the inspectors, the office and laboratory force, for the fine spirit of co-operation which has always been extended.

Very truly yours,

S. M. SLOAN,  
Chief Inspector.

## **XII.—PURE FOOD AND DRUG LAWS.**

The enforcement of the Pure Food and Drug laws, both State and Federal, is perhaps the most difficult task the men of this Department are charged with. Both the State and the Federal laws are weak and carry none of that authority which provides for quick and effective action and makes similar laws for the protection of animal feeds so effective. Indeed, in the matter of food and drugs, the human being is not given one-tenth the protection in the law that is given to the animal.

This year candy shops and factories have been watched very carefully, bleached flour has been looked after, and the work of keeping out unfit corn meal has been prosecuted with the usual vigor.

The laboratory has examined upwards of 100 samples of ciders, so-called near-beers and other concoctions submitted by the Governor's office, the State constables, the sheriffs and magistrates, and the municipal authorities, and have furnished promptly the reports as to alcoholic content.

### **THE BEVERAGES "WITH A KICK."**

During this year the nostrum fakers, with their alcoholic beverages, characterized as "master medicine" and by similar terms, following, as is usually the case, the enactment of the prohibition law, have invaded South Carolina with a rush, and extensive and expensive advertising campaigns have been waged in both the secular and the daily press. Today thousands of dollars per month are being taken from the people in this way. Under the Pure Food and Drug laws we are powerless to stop the process. But of this I have spoken as plainly as I know how elsewhere in this report. I am prepared to furnish the proper legislative committees with analyses and other data upon which to base an Act prohibiting the sale of these goods in the State.

### **THE HARRISON LAW.**

The Department has co-operated throughout the year with the Federal inspectors in their work of enforcing the Harrison Anti-Narcotic law, and has made a number of laboratory examinations of narcotics taken by these inspectors from violators of the law.

**SOFT-DRINK INSPECTION NEEDED.**

At present millions of bottles of soft drinks, such as coca-cola, pepsi-cola, etc., are being sold and consumed annually in the State, and the bottling business based on these products is becoming extensive. So far no inspection of these bottling plants has been provided, and not infrequently bottles containing house-flies, ground glass, etc., are found on the market. Inspection of all these plants should be provided for at once, and an inspection tax on a machine or bottle capacity basis should be levied to defray the expenses. There should, however, be the most complete regular inspection of all bottling plants. With the present laws and inspection forces we are unable to handle the situation.

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**CHIEF CHEMISTS REPORT.**

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.:*

Dear Sir—I have the honor to submit for your approval this, the fourth annual report from the State Laboratory on Foods and Drugs, for the year ending December 31, 1916.

A wonderful improvement in the quality of foods and drugs has been realized during the past two years, and most especially in foods. It is amazingly true that South Carolina, as many other States, have been, and to some degree are still, submitting to the robbery practiced by shrewd advertising and attractively wrapped packages of many patent medicines, chemically bleached flour and rotten tomato ketchup, colored and preserved to deceive the public. It is hoped by the Department that during the coming year, by advertising and the enforcement of the law, that such deceptions can be driven beyond the borders of our State.

**FLOUR.**

Manufacturers have at last realized the seriousness of violating the law in regard to labeling flour as to whether natural or bleached, and also the adulteration with foreign material. Then, too, our people are gradually realizing the fact that artificially whitened flour is not a natural product, and are grasping the idea of the value of using pure food products rather than pretty food products.

**CORN MEAL.**

Three hundred and ninety-one samples of corn meal have been examined during the past year, and quite a few have shown high acidity. This goes to show that manufacturers are still trying to dispose of poor qualities of corn for human consumption, and also that merchants have not yet realized the importance of keeping meal fresh. Corn meal should not be kept on hand longer than two or three weeks. When meal is made from corn slightly damaged, and packed in a warm place, deterioration will increase very rapidly. Good corn meal should be fresh and made from sound corn.

**GRITS.**

As usual, the grits sold in South Carolina has maintained its high standard. This undoubtedly is due to the fact that it is ground into larger particles than meal where the use of inferior grain might be detected. This also affords better penetration of air, retarding deterioration. It might also be due to the fact that grits are not kept on hand in such quantities and for such a length of time as meal.

**CANNED GOODS.**

The inspection of canned goods is important, owing to the fact that so often the cans have not been properly sealed or contain goods which have been improperly canned, causing what is known as "leaks" and "swells," and are, therefore, not only unfit for consumption but dangerous, to say nothing of the enormous amount of inferior products which are canned, being colored and preserved with chemicals in such a way as to completely deceive the consumer. This Department has only contempt for such unscrupulous manufacturers and dealers, and such violations are given the limit of the law.

**DRUGS.**

Carelessness and ignorance in the drug business are appalling. This is especially true in the manufacture of simple preparations. In order to correct this, one of the most important things to do is to require all drug stores to maintain a licensed pharmacist to fill all prescriptions. Many prescriptions are being filled by unlicensed druggists, and often the consumers are ignorant of this fact or do not realize the danger of such practice. Inspec-

tion of this nature will be more vigorous during the coming year, and violations will not be tolerated by the Department.

#### BEVERAGES.

South Carolina is being flooded with so-called soft drinks which contain from 1 per cent. to 18 per cent. alcohol. Almost every fruit stand and many grocery stores handle from one to a dozen brands of such products. As is shown by this report, the Department is doing everything possible to protect our people from such contemptible robbery, but unless adequate laws for the inspection of this class of goods be enacted, little can be done by the Department. Any drink carrying more than 1 per cent. alcohol should be considered an intoxicant, and the sale of same prohibited. Our people are spending thousands of dollars annually for such drinks, which are mostly water with a little coloring matter, sugar and alcohol. Why stop the sale of beer and sit still and allow such drinks as these to be sold by the wholesale, and the majority of them carrying from three to four times the amount of alcohol as is contained in beer?

#### CORN MEAL SAMPLES.

Number of times samples of corn meal were collected from the following towns in South Carolina during 1916:

|                     |   |                       |   |
|---------------------|---|-----------------------|---|
| Abbeville .....     | 3 | Greenwood .....       | 5 |
| Anderson .....      | 1 | Graniteville .....    | 1 |
| Aiken .....         | 1 |                       |   |
| Aicola .....        | 1 | Heath Springs .....   | 1 |
|                     |   | Hodges .....          | 1 |
| Barnwell .....      | 1 | Hartsville .....      | 1 |
| Bennettsville ..... | 4 |                       |   |
| Batesburg .....     | 4 | Johnston .....        | 1 |
| Beaufort .....      | 2 | Jefferson .....       | 1 |
| Blackville .....    | 1 |                       |   |
| Bishopville .....   | 8 | Kershaw .....         | 1 |
|                     |   | Kingstree .....       | 1 |
| Charleston .....    | 8 | Lancaster .....       | 3 |
| Chester .....       | 4 | Lamar .....           | 1 |
| Camden .....        | 3 | Laurens .....         | 3 |
| Clinton .....       | 3 | Lake City .....       | 3 |
| Conway .....        | 2 |                       |   |
| Columbia .....      | 7 | Lowndesville .....    | 1 |
| Clover .....        | 2 | Latta .....           | 1 |
| Chapin .....        | 1 | Langley .....         | 1 |
| Cheraw .....        | 2 | Little Mountain ..... | 1 |
| Calhoun Falls ..... | 2 |                       |   |
|                     |   | Marion .....          | 1 |
| Darlington .....    | 2 | McBee .....           | 1 |
| Dovesville .....    | 1 | Manning .....         | 2 |
| Easley .....        | 1 | McCormick .....       | 1 |
|                     |   | Mayesville .....      | 1 |
| Edgefield .....     | 1 |                       |   |
| Ellenton .....      | 1 | Ninety Six .....      | 2 |
|                     |   | Newberry .....        | 6 |
| Florence .....      | 1 | Orangeburg .....      | 1 |
| Fountain Inn .....  | 1 |                       |   |
|                     |   | Pinewood .....        | 1 |
| Georgetown .....    | 7 | Pomaria .....         | 5 |
| Greenville .....    | 1 |                       |   |



|                    |    |                   |   |
|--------------------|----|-------------------|---|
| Pageland .....     | 1  | Summerton .....   | 2 |
| Port Royal .....   | 1  | Saluda .....      | 1 |
| Prosperity .....   | 2  |                   |   |
| Pacolet .....      | 1  | Troy .....        | 1 |
|                    |    |                   |   |
| Rock Hill .....    | 1  | Union .....       | 1 |
| Ridgeway .....     | 3  |                   |   |
| Ridgeville .....   | 1  | Varnville .....   | 1 |
|                    |    |                   |   |
| Seneca .....       | 6  | Walhalla .....    | 2 |
| Spartanburg .....  | 4  |                   |   |
| Sumter .....       | 11 | Winnaboro .....   | 4 |
| Smyrna .....       | 1  | Westminster ..... | 1 |
| Swansea .....      | 1  | Walterboro .....  | 1 |
| Silverstreet ..... | 1  | Waterloo .....    | 1 |
| Summerville .....  | 1  | Wagener .....     | 1 |
| Scranton .....     | 1  | Woodruff .....    | 1 |
| St. Matthews ..... | 1  |                   |   |

### CORN MEAL.

Number of samples taken from the following manufacturers during 1916:

|  | Total. | Good. | Deficient. |
|--|--------|-------|------------|
| Acme Milling Co., Talbott, Tenn.....             | 10     | 9     | 1          |
| Acme Milling Co., Hopkinsville, Ky.....          | 14     | 10    | 4          |
| Adluh Milling Co., Columbia, S. C.....           | 11     | 8     | 3          |
| American Hominy Co., Indianapolis, Ind.....      | 2      | 2     | 0          |
| Atlanta Milling Co., Atlanta, Ga.....            | 2      | 0     | 2          |
| American Feed Milling Co., Asheville, N. C.....  | 2      | 2     | 0          |
| Boney & Harper Co., Wilmington, N. C.....        | 6      | 5     | 1          |
| Baltimore Pearl Hominy Co., Baltimore, Md..      | 7      | 5     | 2          |
| Clark Milling Co., Augusta, Ga.....              | 8      | 8     | 0          |
| Cockade City Mills, Petersburg, Va.....          | 4      | 4     | 0          |
| Dahnke-Walker Milling Co., Union City, Tenn..    | 7      | 5     | 2          |
| Dunlop Mills, Richmond, Va.....                  | 2      | 1     | 1          |
| Davis, Andrews, Memphis, Tenn.....               | 1      | 1     | 0          |
| Eagle Roller Mills, Greenville, S. C.....        | 2      | 2     | 0          |
| Ellenton Mills, Ellenton, S. C.....              | 1      | 1     | 1          |
| Freeman & Sons, Pickens, S. C.....               | 1      | 1     | 0          |
| Fountain City Mill & Elevator Co., Augusta, Ga.  | 1      | 0     | 1          |
| Gainsville Roller Mills, Gainsville, Ga.....     | 1      | 1     | 0          |
| Hodapp Hominy Co., Seymour, Ind.....             | 1      | 1     | 0          |
| Henderson Roller Mills, Monroe, N. C.....        | 1      | 1     | 0          |
| Interstate Milling Co., Charlotte, N. C.....     | 2      | 2     | 0          |
| Juliette Milling Co., Juliette, Ga.....          | 2      | 2     | 0          |
| Lexington Roller Mills, Lexington, Ky.....       | 1      | 1     | 0          |
| Mayo Milling Co., Richmond, Va.....              | 2      | 1     | 1          |
| Miner-Hilliard Co., Wilkes Barre, Pa.....        | 2      | 2     | 0          |
| Model Mill Co., Johnson City, Tenn.....          | 28     | 17    | 11         |
| Morris & Sheppard, Alexander, N. C.....          | 3      | 2     | 1          |
| Mountain City Mill Co., Chattanooga, Tenn...     | 32     | 21    | 11         |
| Mountain City Milling Co., Greenville, S. C...   | 3      | 1     | 2          |
| Newport Mill Co., Newport, Tenn.....             | 7      | 5     | 2          |
| New Baden Milling Co., New Baden, Ill.....       | 2      | 2     | 0          |
| Piedmont Mills, The, Lynchburg, Va.....          | 7      | 1     | 6          |
| Pratt, Carroll, Bennettsville, S. C.....         | 1      | 1     | 0          |
| Seaboard Feed & Produce Co., Henderson, N. C.    | 4      | 2     | 2          |
| Sears & Co., Circleville, Ohio.....              | 2      | 2     | 0          |
| Shelton Mills, Chattanooga, Tenn.....            | 4      | 4     | 0          |
| Statesville Flour Mill Co., Statesville, N. C... | 4      | 3     | 1          |
| Smith & Co., J. Allen, Knoxville, Tenn.....      | 11     | 10    | 1          |
| Talmadge Bros., Athens, Ga.....                  | 4      | 0     | 4          |
| Town Creek Milling Co., Lenoir City, Tenn...     | 1      | 1     | 0          |
| Van Buren Mills, Nashville, Tenn.....            | 1      | 0     | 1          |
| Wade & Co., John, Memphis, Tenn.....             | 3      | 3     | 0          |
| Watson, W. A., Greensboro, N. C.....             | 1      | 1     | 0          |

### SUMMARY OF ANALYSES OF CORN MEAL.

|  |     |
|--|-----|
| Total number official samples.....     | 391 |
| Total number of samples passed.....    | 239 |
| Total number of samples condemned..... | 152 |

**CORN GRITS.**

Number of times samples of corn grits were collected from the following towns during 1916:

|                  |    |                     |   |
|------------------|----|---------------------|---|
| Beaufort .....   | 1  | Ritter .....        | 1 |
| Columbia .....   | 1  | Salley .....        | 1 |
| Charleston ..... | 12 | Summerville .....   | 3 |
| Elloree .....    | 1  | Sumter .....        | 2 |
| Ferguson .....   | 1  | Varnville .....     | 1 |
| Georgetown ..... | 1  | Walterboro .....    | 1 |
| Kingstree .....  | 1  | White Rock .....    | 1 |
| Port Royal ..... | 1  | Youngs Island ..... | 1 |

**CORN GRITS.**

Number of samples taken from the following manufacturers during 1916:

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| American Hominy Co., Indianapolis, Ind.....   | 3      | 3     | 0          |
| Boney & Harper, Wilmington, N. C.....         | 1      | 1     | 0          |
| City Mills, Columbus, Ga.....                 | 1      | 1     | 0          |
| Dahnke-Walker Milling Co., Chattanooga, Tenn. | 6      | 6     | 0          |
| Louisville Cereal Co., Louisville, Ky.....    | 3      | 3     | 0          |
| Mountain City Mill Co., Chattanooga, Tenn.... | 6      | 6     | 0          |
| New Baden Milling, New Baden, Ill.....        | 6      | 6     | 0          |
| Quaker Oats Co., Chicago, Ill.....            | 1      | 1     | 0          |
| Scott County Milling Co., Sikeston, Mo.....   | 2      | 2     | 0          |
| Shelton Mills, Chattanooga, Tenn.....         | 3      | 3     | 0          |
| Trenton Milling Co., Trenton, Ill.....        | 2      | 2     | 0          |

**SUMMARY OF ANALYSES OF CORN GRITS.**

|  |    |
|--|----|
| Total number official samples .....    | 32 |
| Total number of samples passed .....   | 32 |
| Total number of samples condemned..... | 0  |
| Special samples of grits .....         | 2  |

**FLOUR.**

|   |    |
|---|----|
| Total number official samples .....             | 7  |
| Number of samples passed.....                   | 5  |
| Number of samples bleached and not labeled..... | 2  |
| Number of samples of beverages submitted.....   | 94 |

**CHIEF INSPECTOR'S REPORT.**

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.*

Dear Sir: I have the honor to submit for your approval this, the fourth annual report of Pure Food and Drug Inspection for the year ending December 31st, 1916.

I would respectfully again call your attention to the inadequacy of the present Pure Food and Drug Laws of South Carolina. These laws, after having been amended at different occasions, still need to be revised in order that adequate protection may be had for the human being.

The work of the inspectors again this year has been along the line to determine exactly what is needed in order that this law may become effective. In order to do this we have endeavored to work in close co-operation with the United States Pure Food and Drug officials. Your Chief Inspector, as well as the other inspectors, have made many points in the State in company with a United States inspector. Through this means we have been enabled to get the experience and advice of these officials and feel amply repaid for the time and expense. Practically all the samples of foods and medicines collected have been forwarded, on account of our collaborating commission as United States Pure Food and Drug inspectors to the United States Pure Food and Drug Laboratory at Savannah, Georgia. These officials by agreement have furnished to this Department their findings of all samples collected. In this way the dishonest manufacturer has been punished by seizure as well as criminal prosecution for shipping an adulterated or misbranded article in violation of the Federal laws.

In acknowledgment of the work that has been accomplished along this line the Department has been honored by two separate visits of the Chief, Eastern District, United States Pure Food and Drug Inspection, who brought with him the Chemist in Charge, State Co-operative Food and Drug Inspection. These two high officials have seen fit to compliment this Department on the efficient work done through this co-operative agreement between the two Departments.

We now feel that we are in position, having obtained first hand knowledge and advice of competent officials, to begin a rigid campaign against foods and medicines which have false and fraudulent claims as to the curative or therapeutic effects.

It might be well right here for the inspectors to suggest to you that an amendment to the Pure Food and Drug Laws be enacted which will prevent the advertisement and sale of many of the patent medicines which are being brought into this State by the carload. These medicines are without a doubt a fraud, the manufacturers advertising very extensively in the daily and county papers, making erratic claims which they would not dare to do on the label of the bottle.

Continuing our campaign against corn meal ground out of damaged whole-grain corn, the inspectors have been unusually active, collecting in all 391 samples of meal suspected, while the

Laboratory found by chemical test only 69 samples to show acidity. All of these damaged samples were either promptly seized and destroyed or allowed to be shipped out of State in accordance with the discretion of the Commissioner.

We are glad to be able to report that the flour situation has been much improved. While a great deal of mixed flour, that is, a mixture of wheat and corn products, are being placed on the market, they have in every case been properly labeled. The inspectors have only been able to find three samples of flour which had been bleached that were not so labeled.

It has only been necessary for the inspectors to suggest to the merchants to discard canned goods when found to be damaged. Usually, this is a very easy matter to detect in canned goods by noticing whether or not the cans are swelled.

Your Feed Stuff Inspectors, who are charged by the Feed Stuff Act to assist in the enforcement of the Pure Food and Drug Act, in my opinion, should be congratulated for accomplishing such results as shown above. I trust that this branch of inspection has been carried out in such a manner as to meet with your approval.

Yours very truly,

S. M. SLOAN,  
Chief Inspector.

### XIII.—SEED INSPECTION.

The real value of a State seed inspection law was forcefully illustrated this year. There being no Federal protection against inter-State traffic in adulterated seeds and seeds of little or no germinating power, had it not been for the State law and prompt and vigorous action thereunder in all parts of the State, and the enforcement of a regulation promptly promulgated as to Johnson grass seeds in so-called seed oats, thousands of farms in the State would have become infested this year with Johnson grass, under such circumstances a real pest, and many an acre planted to oats would have resulted in total losses of crop to farmers.

It has been the habit of our people to buy extensive supplies of Red Rust-Proof Oats from Texas, Oklahoma and other Western States each year. This year, when these shipments began to come in, it was speedily observed that the oats were of low germinating power, and that uniformly they carried from 1 per cent to 15 per cent of Johnson grass seed and other miscellaneous seeds. The Department immediately began a vigorous inspection of all shipments that could be reached, and, giving publicity to the situation, urged merchants to ask for inspection and get the seed examined before acceptance. As a result no end of shipments, even in carload lots, were held up, and were released only for shipment beyond the borders of the State, upon copy of the through bill of lading for such shipment being filed with the Department. In many instances, alleged high-grade oats were quoted at ridiculously low prices, this of itself indicating that the shippers were aware of what they were doing, but had no fear of consequences, in the absence of any Federal restriction. Vigorously these shippers, and not a few home merchants, who hated to give up seemingly good profits, fought against interference by the State authorities, and asked to be allowed to sell the stuff for feed purposes. Owing to the fact that the germinating power of Johnson grass and weed seed would not be impaired by passage through the animal, and to the fact that the oats were shipped for seed, the Department refused to transfer the goods to the jurisdiction of the Feed laws, and waged the campaign of protection to the end.

There were many cases of this character, however, that necessarily escaped the attention of the Department and its inspectors, and now the Department is being asked by numerous merchants who ran the risk to aid them in securing redress from the shippers. They sold the seed to the farmers, and in many instances no crops are resulting, save crops of Johnson grass and weeds, and the farmers are very properly demanding redress of the merchants.

The Department has been forced, of course, to advise all such that when they failed to ask inspection before acceptance of the seed, they let slip their only chance for protection; that their transactions were inter-State, and, there being no Federal protection, they have no redress against the shippers save by suit in the Federal Court, where the amount involved is sufficiently large to enable that Court to take jurisdiction.

No situation could have more strikingly illustrated the need of an adequate Federal law regulating the inter-State traffic in seeds. At present out-of-the-State "seedmen" have open sesame to use South Carolina for a dumping ground, and I venture the assertion that the losses of crops to those who purchased direct from "seed" houses in other States runs into the thousands of dollars annually. The Department is in a position to present the records of many actual cases, which are but typical.

One of the best of these foreign shippers of oats, in the midst of the campaign this season, wrote very frankly as follows:

"All of these oats that are not satisfactory in your State for seed we are sending to points outside of your State, and we trust that you will render us whatever assistance you can in getting this trouble straightened out. We are going to urge all of our customers in your State to buy nothing but the re-cleaned oats, and we wish the Commissioner in your State would urge the dealers there to get re-cleaned oats, as we appreciate the necessity of farmers planting nothing but the best grades of seeds.

"Texas this year is full of Johnson grass; in fact, the oats have more Johnson grass in them this season than I have ever known before. This resulted in the fact that our oats were put in the ground late, and the Johnson grass and oats ripened at the same time. Ordinarily the oats ripen a little ahead of the Johnson grass and the farmers are able to thresh their oats practically free of the grass for this reason."

The general work under the seed inspection Act is further dealt with in the subjoined reports.

#### **WEIGHTS AND MEASURES.**

The weights and measures law is extremely defective in that no authority is given, as in other States, to seize and destroy "doctored" scales, and measures with false bottoms, etc., and in that no provision has ever been made to require the stamping of actual weights on packages of commodities sold at retail. Constant complaints of short weights in ice and groceries of various kinds come to the Department. The inspection of scales, gasoline measuring machines and containers, etc., is being prosecuted as thoroughly as possible, and in some instances platform scales have been tested and adjusted, but the protection afforded on weights and measures is not what it ought to be, and it cannot be until the laws are strengthened.

#### **WEIGHTS OF CORN MEAL.**

During the year a great deal of trouble was encountered with short weights of corn meal, and in each instance each sack was required to be brought to full weight before the goods were released.

The need for changing the law so as to provide one standard weight of package for both bolted and unbolted corn meal, so as to conform to the requirements in sister States, is pressing.

#### **PACKAGES OF FLOUR.**

With a view to avoiding complications under different State laws primarily, but really for the purpose of endeavoring to aid in the reduction of the rapidly increasing cost of living, as reflected in bread, owing to the shortness of the wheat crop. I have exercised authority vested in me under the Weights and Measures Act, and so amended the regulations as to sizes of packages of flour sold in the State as to permit the sale of packages of 98 pounds as well as 96 pounds.

The amendment issued reads as follows:

"Amendment to Regulation 8, 1913, under the Weights and Measures Act, issued in Bulletin No. 31, March, 1913:

"Amend Regulation 8 by adding thereto the following:

"It having been brought to my attention that there are conflicting laws in many of the States in which supplies of flour

for this State originate, and through which they are handled, therefore, from December 2, 1916, henceforward, until further notice, it will be permissible to ship into this market and sell in cloth standard size packages of flour weighing either 96 or 98 pounds. In no other particular is the schedule of weights in this regulation altered or changed."

In North Carolina and Virginia, and in the Northwestern States the required sizes are 98s. Bakers use Spring Wheat flours almost exclusively, and that means that their supplies chiefly come from Kansas and Virginia. Large quantities designed for South Carolina are handled through Virginia.

A barrel of flour in this State, as elsewhere, must weigh 196 pounds by law, but it is generally shipped in half-barrel packages.

A barrel of flour will produce 330 pounds of dough, or 5,280 ounces. Bakers are now scaling their bread from 13 ounces to 11 ounces, but, taking the first figure as a unit, we would get from a barrel of flour exactly 400 five-cent loaves of bread, or a fraction over two loaves of bread for every pound of flour. If I had kept the 98-pound sack out, he would be short four pounds to the barrel, or a loss of eight five-cent loaves, or he would be getting 40 cents a barrel less for his product than the baker across the State line who uses the 98-pound sack.

This amendment helps the baker by eight five-cent loaves to the barrel, and puts them in a position to keep down the price to the consuming public. My action is intended to help both, but the public must insist on its rights.

What is said above would apply equally to the housekeeper buying a half-barrel sack of flour, but there are but few sales of family flour in so large packages.

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### CHIEF CHEMISTS REPORT.

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.:*

Dear Sir—I have the honor to submit for your approval this, the third annual, report from the State Laboratory on seed and grain, for the year ending December 31, 1916.

The inspection of agricultural seed as to purity and vitality is one of the most important lines of work in the Department, and has been clearly demonstrated as such during the past year.



Thousands of bushels of oats have been shipped into South Carolina contaminated with Johnson grass, and if it had not been for the rigid inspection of the Department of Agriculture, there would have been hundreds of farmers who would have had their farms almost ruined with this grass. After once started on a farm, about the only way to destroy Johnson grass is by pasturing the land, and few farmers can afford to turn so large an acreage into pasture for two or three years. Therefore, it would have been an everlasting pest for them to fight.

The Department has also found quite a few seed with very low germinal qualities which were being offered for sale, and if they had been allowed to be sold for seed purposes, there would have been a number of our farmers who would have realized heavy losses, due to the ignorance or unscrupulousness of seed dealers.

I am glad to say that during the past year numbers of both farmers and seed dealers have realized its importance and have made use of the Department more than ever before, and I feel that during the coming year we will be able to render even better protection along this line—something so long needed.

#### **OATS.**

The fake oats that flooded our markets several years ago, containing enormous quantities of foreign seed, have almost completely disappeared from South Carolina. Shipments were found during the year, however, containing from 15 to 40 per cent. foreign seed, which goes to show how important inspection is in order that our farmers may be protected in such cases.

#### **CORN.**

The quality of corn shipped into South Carolina during the past year has surpassed any year since inspection was begun. During the entire year our inspectors have found it necessary to draw only seven official samples, and of this number only one had to be condemned by the Department. There is no State today receiving a better quality of corn than is being shipped into South Carolina, and this is entirely due to the rigid inspection by the Agricultural Department.

**SEED.**

Number of samples of seed taken from the following shippers during 1915:

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Adams Grain & Provision Co., Nashville, Tenn..... | 2      | 1     | 1          |
| Adams Grain & Provision Co., Richmond, Va.....    | 1      | 1     | 0          |
| Augusta Grocery Co., Augusta, Ga.....             | 2      | 0     | 2          |
| Arrington & Co., Augusta, Ga.....                 | 1      | 0     | 2          |
| Bulst Co., Robert, Philadelphia, Pa.....          | 1      | 1     | 0          |
| Bluff City Grain Co., Memphis, Tenn.....          | 4      | 3     | 1          |
| Bates, R. J., Augusta, Ga.....                    | 1      | 0     | 1          |
| Bewley Mills, Fort Worth, Texas.....              | 2      | 0     | 2          |
| Bussey & Cromwell, Augusta, Ga.....               | 1      | 0     | 1          |
| Cowpens Grocery Co., Cowpens, S. C.....           | 2      | 1     | 1          |
| Carr-Lee Grocery Co., Augusta, Ga.....            | 6      | 0     | 6          |
| Calhoun County Raised.....                        | 1      | 1     | 0          |
| Carlton Bros. & Co., G. M., Hamilton, Texas.....  | 1      | 0     | 1          |
| Dixie Grain & Hay Co., Nashville, Tenn.....       | 1      | 1     | 0          |
| Durst Andrews Co., Greenwood, S. C.....           | 1      | 0     | 1          |
| Davissan & Co., Galveston, Texas.....             | 2      | 0     | 2          |
| Greenwood Grocery Co., Greenwood, S. C.....       | 1      | 1     | 0          |
| Gillette Grain Co., Nashville, Tenn.....          | 7      | 3     | 4          |
| Gasaway, J. L., Double Branches, Ga.....          | 1      | 1     | 0          |
| Hill & Co., Audley, Augusta, Ga.....              | 1      | 1     | 0          |
| Howe Grain & Mercantile Co., Howe, Texas.....     | 25     | 9     | 16         |
| Hale & Co., J. R., Nashville, Tenn.....           | 6      | 5     | 1          |
| Hardison & Hardison, Wadesboro, N. C.....         | 2      | 2     | 0          |
| Hodgson & Co., Athens, Ga.....                    | 3      | 2     | 1          |
| Horton & Co., J. B., Memphis, Tenn.....           | 11     | 11    | 0          |
| Hughes & McCoy, Howe, Texas.....                  | 1      | 0     | 1          |
| Harsh Grain Co., Nashville, Tenn.....             | 1      | 1     | 0          |
| Jones Co., Fulmer, Norway, S. C.....              | 1      | 1     | 0          |
| Jones, Chas. D., Memphis, Tenn.....               | 1      | 1     | 0          |
| Jones, L. D., Memphis, Tenn.....                  | 2      | 2     | 0          |
| Jesup, Geo. L., Pompeii, Mich.....                | 1      | 1     | 0          |
| Kibler Co., J. W., Newberry, S. C.....            | 1      | 0     | 0          |
| Kirby Seed Co., Gaffney, S. C.....                | 5      | 3     | 2          |
| Loewith Larson & Co., New York, N. Y.....         | 1      | 1     | 0          |
| Logan & Co., Nashville, Tenn.....                 | 1      | 1     | 0          |
| Lorick & Lowrance, Columbia, S. C.....            | 1      | 1     | 0          |
| Mixson Seed Co., W. H., Charleston, S. C.....     | 5      | 5     | 0          |
| Montgomery, Mrs. A. S., Marion, S. C.....         | 1      | 1     | 0          |
| Madra, John, Lancaster, S. C.....                 | 1      | 1     | 0          |
| Murphey & Co., Augusta, Ga.....                   | 2      | 0     | 2          |
| Matthews & Co., Geo. B., New Orleans, La.....     | 1      | 0     | 1          |
| Pittman & Harrison, Claremore, Okla.....          | 5      | 1     | 4          |
| Pittman & Harrison, Sherman, Texas.....           | 5      | 3     | 2          |
| Palmetto Brokerage Co., Greenville, S. C.....     | 1      | 1     | 0          |
| Pitner & Buesse, Athens, Ga.....                  | 1      | 1     | 0          |
| Rose, Casewell E., Nashville, Tenn.....           | 3      | 3     | 0          |
| Rex Mill & Feed Co., Nashville, Tenn.....         | 1      | 1     | 0          |
| South Carolina Raised.....                        | 1      | 1     | 0          |
| Seely-Farley Grain Co., Waco, Texas.....          | 1      | 0     | 1          |
| Sadler Shelton, Whitesboro, Texas.....            | 1      | 0     | 1          |
| Sunset Milling Co., Temple, Texas.....            | 1      | 0     | 1          |
| Satcher & Nixon, Augusta, Ga.....                 | 1      | 0     | 1          |
| Smith Bros., Augusta, Ga.....                     | 1      | 0     | 1          |
| Tennessee Grain Co., Nashville, Tenn.....         | 2      | 2     | 0          |
| Tate, W. R., Nashville, Tenn.....                 | 2      | 2     | 0          |
| Wood-Stubbs Co., Louisville, Ky.....              | 1      | 1     | 0          |
| Willett Grain Co., N. L., Augusta, Ga.....        | 1      | 1     | 0          |
| Wieters, E. F. A., Charleston, S. C.....          | 3      | 0     | 3          |

**SUMMARY OF SEED.**

|   |     |
|---|-----|
| Total number of official samples.....                             | 154 |
| Samples of oats.....  | 134 |
| Samples of wheat.....   | 1   |
| Samples of cane seed.....   | 3   |
| Samples of cotton seed.....                                       | 1   |
| Samples of rye.....   | 6   |
| Samples of rape.....  | 2   |
| Samples of beans.....   | 1   |
| Samples of alfalfa.....   | 1   |
| Samples of vetch.....   | 1   |
| Samples of clover.....  | 1   |
| Samples of rye grass.....   | 2   |
| Samples of Bermuda grass.....                                     | 1   |
| Number of samples of oats containing Johnson grass.....           | 64  |
| Number of samples of seed submitted by farmers and merchants..... | 60  |

**FEED OATS.**

Number of samples taken from the following shippers during 1916:

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Adams Grain & Provision Co., Charlotte, N. C..... | 1      | 1     | 0          |
| Adams Grain & Provision Co., Nashville, Tenn..... | 1      | 1     | 0          |
| Coffer, J. H., Norfolk, Va.....                   | 1      | 1     | 0          |
| Gillette Grain Co., Nashville, Tenn.....          | 6      | 2     | 4          |
| Horton & Co., J. B., Nashville, Tenn.....         | 1      | 1     | 0          |
| Howe Grain & Mercantile Co., Howe, Texas.....     | 1      | 0     | 1          |
| Hasting, Samuel, Cairo, Ill.....                  | 2      | 2     | 0          |
| Howell Grain & Feed Co., Union City, Tenn.....    | 2      | 2     | 0          |
| Harsh Grain Co., Nashville, Tenn.....             | 2      | 2     | 0          |
| Jones, Chas. D., Nashville, Tenn.....             | 1      | 1     | 0          |
| Logan & Co., Nashville, Tenn.....                 | 1      | 1     | 0          |
| Liye, Raymond P., Toledo, Ohio.....               | 1      | 1     | 0          |
| Mayo Milling Co., Richmond, Va.....               | 4      | 0     | 4          |
| McDonald & Co., New Albany, Ind.....              | 2      | 2     | 0          |
| Rose, Caswell E., Nashville, Tenn.....            | 2      | 2     | 0          |
| Stalnaker Bros., Greenwood, S. C.....             | 1      | 0     | 1          |
| Southern States Co., Nashville, Tenn.....         | 2      | 0     | 2          |
| Southern States Co., Memphis, Tenn.....           | 1      | 0     | 1          |
| Tennessee Oklahoma Grain Co., Memphis, Tenn.....  | 1      | 0     | 1          |
| Tennessee Grain Co., Nashville, Tenn.....         | 6      | 0     | 6          |
| Tate, W. R., Nashville, Tenn.....                 | 1      | 0     | 1          |
| No shipper given.....                             | 1      | 1     | 0          |

**SUMMARY OF ANALYSIS OF OATS.**

|  |    |
|--|----|
| Total number of samples.....           | 42 |
| Total number of samples passed.....    | 21 |
| Total number of samples deficient..... | 21 |

Number of times samples of oats were collected from the following towns during 1916:

|                  |   |                    |   |
|------------------|---|--------------------|---|
| Anderson .....   | 1 | Eutawville .....   | 1 |
| Abbeville .....  | 2 | Edgefield .....    | 1 |
| Charleston ..... | 6 | Gaffney .....      | 2 |
| Easley .....     | 1 | Heath Springs..... | 1 |
|                  |   | Honea Path.....    | 1 |
|                  |   | Kershaw .....      | 1 |

|                   |   |                    |   |
|-------------------|---|--------------------|---|
| Leesville .....   | 2 | Ridgeway .....     | 1 |
| McCormick .....   | 2 | Starr .....        | 1 |
| Newberry .....    | 3 | Sumter .....       | 3 |
|                   |   | Saluda .....       | 1 |
| Pickens .....     | 1 | Simpsonville ..... | 1 |
| Piedmont .....    | 1 | West Union .....   | 4 |
| Pulm Branch ..... | 1 | Woodruff .....     | 2 |
|                   |   | Walterboro .....   | 2 |

**CORN.**

Number of samples taken from the following manufacturers during 1916:

|  | Total. | Good. | Deficient. |
|--|--------|-------|------------|
| Bluff City Grain Co., Memphis, Tenn.....         | 1      | 1     | 0          |
| Coffey & Co., J. H., Norfolk, Va.....            | 1      | 1     | 0          |
| Gillette Grain Co., Nashville, Tenn.....         | 1      | 0     | 1          |
| Overman Williamson Co., Richmond, Va.....        | 1      | 1     | 0          |
| Phillips, Patterson & Co., Richmond, Va.....     | 1      | 1     | 0          |
| Tennessee Oklahoma Grain Co., Memphis, Tenn..... | 1      | 1     | 0          |
| Zeln & Co., S., Louisville, Ky.....              | 1      | 1     | 1          |

**SUMMARY OF ANALYSIS OF CORN.**

|  |   |
|--|---|
| Total number of official samples.....  | 7 |
| Total number of samples passed.....    | 6 |
| Total number of samples deficient..... | 1 |
| Special samples of corn.....           | 8 |

Respectfully submitted,  
A. C. SUMMERS,  
Chief Chemist.

**CHIEF INSPECTOR'S REPORT.**

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.:*

Dear Sir—In addition to their various other duties, the Commercial Feed Stuff Inspectors are charged with the important duty of enforcing the Seed Inspection Law. This branch of inspection is, perhaps, equally important to the farmers of the State as any other branch of the State Government. While the present law could be greatly improved upon by some slight amendments, we feel that a great deal of good has been accomplished.

We feel by the inspection of seed oats alone and the consequent condemnation of large quantities of "seed oats" by the Department, that the farmers of the State have been saved in dollars and cents, to say nothing of keeping their farms free of the noxious Johnson grass seed, more than the total amount of all inspection of the various branches of this Department. Altogether, the inspectors this season have stopped the sale of thousands of bushels

of Texas Red Rust Proof seed oats shipped into this State from Texas. These oats contain from 1 to 20 per cent. Johnson grass seed. The season in Texas this year was such that the oats and the Johnson grass matured at the same time.

A great many merchants contracted for large quantities of seed oats from other States at a much cheaper price than they could purchase good seed at home, and did not take proper precaution to have these oats guaranteed to them to come within the South Carolina law for purity and germination. In consequence of this the Department, to protect the planter, was forced to order these oats out of the State.

In addition to oats, the inspectors have found several lots of adulterated wheat and barley. These containing a good percentage of wild onion seed.

In their rounds of inspection, the inspectors have endeavored to broadcast the information to merchants and farmers, warning them to purchase only guaranteed seed from reliable houses. When a shipment of seed arrives, these parties were advised to send a small sample into this Department for a purity and germination test before accepting. In this way the Department has been able to perform much more effective work, and the farmer has been brought in closer touch with the Department.

We would earnestly suggest to you for your consideration that the Seed Inspection Law be so amended as to give you the same power and rights as you now have with the Commercial Feed Stuffs Law.

Very truly yours,

S. M. SLOAN,  
Chief Inspector.

#### **XIV.—STATE EXHIBITS.**

The State exhibit property, of which the Commissioner of Agriculture is the custodian under the law, has been materially added to during the year, and it is ready at any time to be set up for display. It is still housed in the State Building at the State Fair Grounds, and is given attention at times throughout the year.

This year the property has only been used for exhibit at the State Fair and at a number of the county fairs held in the State, these last displays being made under the special Act governing the sending of educational exhibits to such county fairs as want and apply for them.

The property has not been sent out of the State to any exhibition during the year. The State is asked, however, during February to make an exhibit at the Southeastern Land Show at Atlanta, Ga., and in the fall of 1917 to make a mineral exhibit at the Chemical Exposition in New York City.

At the State Fair of 1916 the Department presented one of the most comprehensive education exhibits it has made in recent years, and the attractiveness of the display was greatly augmented by the handsome display of road models loaned by the United States Office of Public Roads, and by the handsome enlarged and accurate model of the boll weevil loaned by the United States Bureau of Entomology.

Below is appended the report as to the exhibits sent to the county fairs:

Columbia, S. C., December 31, 1916.

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries.*

Dear Sir: Applications for the State Exhibits were made by the following Fair Associations: Tri-County Fair, Batesburg; Chesterfield County Fair, Marion County Fair, and Lee County Fair.

The principal features of the exhibits this year were the demonstration of the boll weevil by illustrations and models; large road models showing the many methods of road building and

maintenance; a complete series of charts covering all phases of agriculture and exhibits showing the work of the several bureaus of the Department of Agriculture, Commerce and Industries.

November 7-10—Tri-County Fair, Batesburg. The State Exhibit, the first shown at this fair, was the center of attraction and there were many comments as to its completeness, and the object lessons it brought to the people of the State. Much interest was manifested in the boll weevil exhibit. The road building section attracted many and the fair officers expressed themselves as more than pleased that they had been able to give to their patrons so many object lessons. Inspector J. P. Selby was in charge and at all times ready to answer questions and give information.

November 8-11—Chesterfield County Fair at Chesterfield. The State Exhibit was shown at this fair for the first time. Over ten thousand people visited this fair and much interest was taken by the visitors in the State Exhibit; especially was the method of oil, feed, and food inspection favorably commented upon. A feature of this fair, which I desire to call to your attention, was the most excellent exhibits made by the County Girls' Community Clubs, exhibits and the individual farm exhibits, which showed the wonderful agricultural possibilities of Chesterfield County. Inspector W. S. Bonner was in charge and at all times was ready to explain the exhibits and give information.

November 8-10—Marion County Fair at Marion. The State Exhibit with many additions was the center of attraction for the second time at this fair. The boll weevil and good roads sections attracted thousands and were highly commented on for completeness and for the lessons brought to the people of Marion. The gasoline and kerosene exhibits were of much interest to all users of these products. The exposure of the frauds in patent medicines was freely commented on and much credit given the Department for its endeavor to rid the State of all quack preparations. The officers of the Marion County Fair are now at work on new plans for the next fair. The grounds are to be enlarged and more buildings erected. Inspector J. H. Woodward was in charge and gave interesting explanations of the many features of the exhibits.

November 29-December 2—Lee County Fair at Bishopville. This being the first fair ever held in Lee County the attendance was large. The State Exhibit attracted much attention and the

visitors studied everything in the exhibit, especially the boll weevil exhibit, in which all were highly interested. The good roads section, which showed the methods of building and maintaining roads, was carefully studied and commented upon for its completeness and the lessons taught. The general exhibit of gasoline and kerosene inspection and exposure of patent medicine frauds met with general approval. The officers of the association were high in their praise of the State Exhibit and the many interesting features it presented. The Exhibit was in charge of Mr. Nathan Burkett.

The following amounts show the cost to each Fair, the same being the actual expenses incurred from the time the exhibits left Columbia until their return to the warehouse:

|                         |         |
|-------------------------|---------|
| Batesburg Fair .....    | \$40.25 |
| Chesterfield Fair ..... | 55.35   |
| Marion Fair .....       | 72.73   |
| Bishopville Fair .....  | 37.68   |

The general opinion of the officers of the several Fairs when exhibits were installed, was that the State Exhibits were a most interesting and instructive feature of the Fairs.

I personally installed and arranged all movements of the exhibits, having as my assistant Mr. Nathan Burkett. I desire to return my thanks to the officials of the Southern Railway, Seaboard Air Line and the Atlantic Coast Line for the assistance given me in making quick and easy movements of the State property.

Yours very truly,

JAS. D. LEE,  
Superintendent State Exhibits.



## XV.—OIL AND GASOLINE.

One of the best and most thoroughly enforced laws on the statute books of South Carolina is the Gasoline and Kerosene Inspection Act. This is the only State in the Union wherein the purchaser gets gasoline when he buys gasoline, and not naphtha under the name of gasoline. In 1915 a total of 7,526,018 gallons of gasoline were sold in the State, and this year the gallonage has been much larger.

During the year there have been but few troubles in the enforcement of this law. There was some excitement during the year over the wave of high prices that swept over the entire country, and at one time the independent jobbing companies found it difficult to get supplies, but this difficulty soon passed. At the close of the year the situation is uniformly excellent and a higher quality of material than ever is being shown by all shipments.

During the spring, to ascertain what sister States were getting, the Commissioner, accompanied by an inspector, passed through most of these States by motor, securing regular market material samples, and the results speak for themselves.

When our Inspection Act first went into effect I realized very quickly that Beaume gravity meant practically nothing, and that there was but one test that could be applied that would give any accurate result in the matter of gasoline. I did not hesitate, the law having given me authority to do so, to establish a standard, and I did so upon a residue basis, making the maximum residue not more than 8.0% at 150 degrees C. At first the various oil companies claimed that they could not live up to the standard. Fortunately all of this material, or practically all of it, that comes into this State comes in through the main port in barges, and we were in a position to handle the situation absolutely. We very quickly found that the standard could be met, and from that day on the standard has been met. So far as I know South Carolina is the only State in which when you buy gasoline you get it, and not naphtha.

In order to make a comparison with the conditions in other States, during the week of May 8, I had samples drawn at a good many points in other States, and at twenty-nine stations in South Carolina, and the following data is of interest:

| Sample Drawn At           | Price Pd.<br>Per Gal. | Manufacturer. | Residue<br>Per Cent. | Gravity. | Remarks. |
|---------------------------|-----------------------|---------------|----------------------|----------|----------|
| Southern Pines, N. C..... | .26                   | Standard      | 16.2                 | 60—      | Naphtha  |
| Fredericksburg, Va.....   | .26                   | Standard      | 13.3                 | 62—      | Naphtha  |
| Washington, D. C.....     | .26                   | Unknown       | 17.0                 | 61—      | Naphtha  |
| Alexandria, Va.....       | .26                   | Standard      | 29.5                 | 58—      | Naphtha  |
| Petersburg, Va.....       | .26                   | Standard      | 12.0                 | 61—      | Naphtha  |
| South Hill, Va.....       | .30                   | Standard      | 13.5                 | 61—      | Naphtha  |
| Apex, N. C.....           | .27 1/2               | Texas         | 21.0                 | 61—      | Naphtha  |
| Durham, N. C.....         | .25                   | Indian        | 24.0                 | 60—      | Naphtha  |
| Rockingham, N. C.....     | .26                   | Gulf          | 13.5                 | 63—      | Naphtha  |
| Gastonia, N. C.....       | ...                   | Texas         | 20.0                 | 64—      | Naphtha  |
| Gastonia, N. C.....       | ...                   | Texas         | 49.0                 | 63—      | Naphtha  |
| Asheville, N. C.....      | ...                   | Standard      | 18.5                 | 60—      | Naphtha  |
| Hendersonville, N. C..... | ...                   | Texas         | 33.0                 | 62—      | Naphtha  |
| Augusta, Ga.....          | .26                   | Peoples       | 17.0                 | 62—      | Naphtha  |
| Augusta, Ga.....          | .26                   | Peoples       | 14.2                 | 62—      | Naphtha  |
| 29 Stations in S. C.....  | .26 1/2               | All Companies | 5.99                 | ....     | Gasoline |

Although we have maintained this standard, and material carrying even not more than 4.0% of residue is frequently delivered in this State.

Noting the figures as to Beaume gravity it will be seen that not infrequently very high Beaume accompanies a mixture that is \$50.0% kerosene.

The reports of the Chief Inspector and the Chief Chemist attached will show how thoroughly and effectively the oil and gasoline inspection work is done.

### CHIEF CHEMIST'S REPORT.

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.*

Dear Sir: I have the honor to submit this, the fourth annual report from the State Laboratory on petroleum oils for the year ending December 31, 1916.

When this law was first enacted there was such keen opposition by the oil representatives that at times I was almost convinced that such a law would be detrimental to many, if not all, oil companies in regard to their business in South Carolina. This was due to the fight put up by the oil companies and also to the fact that there was no similar law in any other State. Nevertheless, after your untiring efforts in convincing the Legislature of the merits of such a law and influencing the passage of same, I determined to see if this law would be of any service in protecting our people from being imposed upon with inferior petroleum products. After observing for three years the qualities of gasoline offered for sale in South Carolina as compared with that offered for sale in adjoining States, I feel free to say, without fear of contradiction by any one conscientious in his views,

that there has never been a law enacted in this State that has meant more to our people in the way of protection than the petroleum oil law.

#### **GASOLINE.**

We have examined over 2,700 samples of gasoline during the past year, representing every shipment sent into South Carolina, and in only a few cases did we find any violation of the law, and in such cases the deficiency was immediately corrected by the manufacturer at a cost, in some cases, of many dollars. Our inspectors, from time to time, have submitted samples of gasoline purchased from cars being shipped into other States, and also from gasoline being offered for sale in other States, and in every case it was found to be far inferior to the South Carolina gasoline. In almost every case it contained from 14 to 40 per cent. of kerosene and heavy oils. This alone shows what the law means to our people, for if they did not have such protection, they, too, would be buying a mixture of gasoline and kerosene at gasoline prices. Furthermore, an oil representative stated to the writer that gasoline shipped into South Carolina was re-distilled in order to meet South Carolina inspection, and also that it contained less kerosene and heavy oils than gasoline shipped into other States. This statement corroborates our findings.

In regard to the analysis of gasoline, I wish to say that the simpler tests made, such as gravity, sulphur, acid, etc., are of minor importance, and while they are useful in determining the quality of gasoline, they do not compare in importance to main tests, such as fractional distillation. Many cases show high gravity gasoline to be superior in quality to low gravity gasoline and *vice versa*. The gravity depends upon the field from which it is mined and whether from asphalt or paraffin basis, and for this reason a gravity test alone would mean nothing as to the quality of the gasoline. Therefore, I feel that our fractional examination is the only true test as to its quality.

During the past year we have received better co-operation from both the oil companies and the retail dealers than ever before, and I believe our people are beginning to appreciate your untiring efforts in the enforcement of this law.

#### **KEROSENE.**

The examination of over 900 samples of kerosene shows that this product has met with the requirements in every respect dur-

ing the entire year. In a very few cases samples have shown slight deficiencies, but the Department was convinced that there was no intentional violation on the part of the oil companies, and, therefore, such deficiencies were not considered serious. While this product has been practically up to the standard during the entire year, it in no way means that such inspection is not necessary, for the allowing of a small amount of gasoline to find its way into a tank of kerosene through carelessness or ignorance might cause the death of a number of innocent people, and, therefore, I feel that this inspection is of as great or even greater importance than the inspection of gasoline.

During the past year I have been convinced that our standard can be met without working a hardship upon the oil companies, and, therefore, have no recommendation to make at the present in regard to any change in the present law.

#### NAPHTHA.

Naphtha is a substitute for gasoline and carries from 8.1 per cent. to 50 per cent. of kerosene and heavy oils. When one buys naphtha he has no idea of the quality of such product, and in so doing must remember that it is made of an indefinite mixture of gasoline, kerosene and heavy oils. Therefore, if one wishes to use such a product, it would be far better to purchase gasoline and kerosene and make such a mixture as desired and at a much less cost than by buying naphtha.

#### SAMPLES OF GASOLINE.

Number of samples of gasoline collected from the following towns during the year 1916:

|               |    |              |     |
|---------------|----|--------------|-----|
| Abbeville     | 14 | Charleston   | 91  |
| Aiken         | 30 | Cheraw       | 23  |
| Allendale     | 15 | Chester      | 26  |
| Anderson      | 37 | Chesterfield | 2   |
| Augusta, Ga.  | 3  | Clinton      | 10  |
| Bamberg       | 27 | Cllo         | 6   |
| Barnwell      | 18 | Clover       | 10  |
| Batesburg     | 19 | Columbia     | 163 |
| Beaufort      | 12 | Conway       | 18  |
| Belton        | 10 | Cottageville | 2   |
| Bennettsville | 33 | Darlington   | 32  |
| Bishopville   | 20 | Denmark      | 13  |
| Blacksburg    | 1  | Dillon       | 22  |
| Blacksville   | 23 | Easley       | 10  |
| Bluffton      | 1  | Eastover     | 3   |
| Bowling Green | 1  | Edgefield    | 17  |
| Branchville   | 14 | Ehrhardt     | 2   |
| Brightsville  | 1  | Ellenton     | 4   |
| Brunson       | 2  | Elliott      | 3   |
| Camden        | 25 | Elloree      | 3   |
| Cameron       | 4  | Fatall       | 19  |
| Carlisle      | 1  | Eutawville   | 2   |
| Cayce         | 1  | Fairfax      | 14  |

|                 |    |                  |     |
|-----------------|----|------------------|-----|
| Florence        | 39 | Nichols          | 1   |
| Fort Mill       | 1  | North            | 14  |
| Fort Motte      | 3  | North Augusta    | 19  |
| Fountain Inn    | 1  | North Charleston | 101 |
| Furman          | 2  | Olar             | 1   |
| Gaffney         | 22 | Orangeburg       | 43  |
| Gastonla, N. C. | 2  | Osborne          | 1   |
| Georgetown      | 17 | Pageland         | 7   |
| Graniteville    | 3  | Pages Mill       | 1   |
| Gray Court      | 1  | Parlers          | 1   |
| Greeleyville    | 2  | Pellon           | 2   |
| Green Pond      | 5  | Pelzer           | 3   |
| Greenville      | 41 | Pendleton        | 1   |
| Greenwood       | 38 | Pickens          | 2   |
| Greer           | 6  | Piedmont         | 1   |
| Hampton         | 5  | Pleasant Valley  | 1   |
| Hardeeville     | 2  | Port Royal       | 1   |
| Harleyville     | 1  | Poston           | 1   |
| Hartsville      | 18 | Reevesville      | 1   |
| Heath Springs   | 2  | Ridgeland        | 13  |
| Hemlinway       | 2  | Ridge Spring     | 2   |
| Holly Hill      | 8  | Ridgeville       | 3   |
| Honea Path      | 9  | Ridgeway         | 3   |
| Inman           | 1  | Ritter           | 1   |
| Islandton       | 1  | Rock Hill        | 25  |
| Iva             | 2  | Round            | 1   |
| Johnston        | 15 | Rowesville       | 1   |
| Jonesville      | 2  | Salley           | 3   |
| Jordan          | 1  | Saluda           | 6   |
| Kershaw         | 3  | Scotia           | 1   |
| Klingstree      | 11 | Seneca           | 36  |
| Kline           | 1  | Sharon           | 2   |
| Lake City       | 14 | Shelton          | 2   |
| Lamar           | 3  | Simpsonville     | 1   |
| Lancaster       | 14 | Smoaks           | 1   |
| Landrum         | 3  | Spartanburg      | 45  |
| Lanes           | 4  | Springfield      | 4   |
| Latta           | 1  | Summertown       | 5   |
| Laurens         | 30 | Summerville      | 2   |
| Leesville       | 3  | Sumter           | 48  |
| Lena            | 4  | Swansea          | 2   |
| Lexington       | 7  | St. George       | 8   |
| Liberty         | 1  | St. Matthews     | 17  |
| Lodge           | 2  | Timmons ville    | 3   |
| Loris           | 7  | Trenton          | 4   |
| Lucknow         | 1  | Union            | 17  |
| Lydia           | 1  | Varnville        | 4   |
| Lynchburg       | 1  | Wagener          | 17  |
| Manning         | 47 | Walhalla         | 5   |
| Marion          | 13 | Walterboro       | 15  |
| McBee           | 1  | Warrenville      | 2   |
| McColl          | 12 | Westminster      | 2   |
| McCormick       | 5  | Williston        | 5   |
| Meggetts        | 7  | Winnsboro        | 7   |
| Miley           | 1  | Woodruff         | 8   |
| Moncks Corner   | 1  | Yemassee         | 7   |
| Mullins         | 13 | Yonges Island    | 6   |
| Newberry        | 22 | York             | 6   |

Samples of gasoline collected from the following companies during the year 1916:

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Standard Oil Co., New Jersey              | 554    | 550   | 4          |
| Gulf Refining Co., Jacksonville, Fla.     | 519    | 430   | 89         |
| The Texas Co., Fort Arthur, Texas         | 523    | 493   | 30         |
| Phoenix Refining Co., Sand Springs, Okla. | 39     | 39    | 0          |
| Southern States Oil Co., Aiken, S. C.     | 22     | 22    | 0          |
| Charleston Oil Co., Charleston, S. C.     | 15     | 15    | 0          |
| Germania Refining Co., Oil City, Pa.      | 14     | 11    | 3          |
| Cape Fear Oil Co., Wilmington, N. C.      | 15     | 6     | 9          |
| Peoples Oil Co., North Augusta, S. C.     | 10     | 6     | 4          |
| Gulf Refining Co., Pa.                    | 9      | 9     | 0          |
| Filtered Oil Co., Allendale, S. C.        | 9      | 9     | 0          |
| Petroleum Oil Co., Anderson, S. C.        | 6      | 6     | 0          |
| Southern States Oil Co., Barnwell, S. C.  | 6      | 6     | 0          |
| Emery Manufacturing Co., Bradford, Pa.    | 4      | 4     | 0          |
| Wm. Robinson & Sons Co., Baltimore, Md.   | 4      | 2     | 2          |
| Peoples Oil Co., Denmark, S. C.           | 3      | 3     | 0          |
| Sapulpa Refining Co., Sapulpa, Okla.      | 4      | 3     | 1          |

|   | Total. | Good. | Deficient. |
|---|--------|-------|------------|
| Southern States Oil Co., Johnston, S. C.....  | 3      | 3     | 0          |
| E. S. Redd, Wagener, S. C.....                | 2      | 2     | 0          |
| D. B. Plunkett & Son, Aiken, S. C.....        | 2      | 2     | 0          |
| Union Petroleum Co., Chicago, Ill.....        | 3      | 1     | 2          |
| Titusville Oil Works, Titusville, Pa.....     | 2      | 2     | 0          |
| Economy Oil Co., Charleston, S. C.....        | 2      | 2     | 0          |
| Lake Park Refining Co., Sapulpa, Okla.....    | 2      | 0     | 2          |
| J. B. Cushman Sons, Aiken, S. C.....          | 1      | 1     | 0          |
| Jenkins Auto Specialty Co., Sumter, S. C..... | 2      | 1     | 1          |
| Motor Fuel Co., Sapulpa, Okla.....            | 1      | 1     | 0          |
| Peoples Oil Co., McCormick, S. C.....         | 1      | 1     | 0          |
| Union Petroleum Co., Wellsville, N. Y.....    | 1      | 1     | 0          |
| Penn Oil Products Co., Eldridge, Pa.....      | 1      | 1     | 0          |
| Summer Bros. Co., Newberry, S. C.....         | 1      | 1     | 0          |
| Union Petroleum Co., Philadelphia, Pa.....    | 1      | 0     | 1          |
| Peoples Oil Co., Florence, S. C.....          | 1      | 1     | 0          |
| Constantine Refining Co., Tulsa, Okla.....    | 1      | 0     | 1          |
| Caddo Oil Refinery, Shreveport, La.....       | 1      | 0     | 1          |
| R. E. G. Oil Co., Florence, S. C.....         | 1      | 1     | 0          |
| Peoples Oil Co., Columbia, S. C.....          | 1      | 1     | 0          |
| Peoples Oil Co., North, S. C.....             | 1      | 1     | 0          |
| Petroleum Oil Co., Greenville, S. C.....      | 1      | 1     | 0          |
| Cosden Co., Tulsa, Okla.....                  | 1      | 1     | 0          |
| J. F. Campion, Tulsa, Okla.....               | 1      | 1     | 0          |
| No manufacturer given.....                    | 44     | 34    | 10         |
|   | 1834   | 1674  | 160        |

### SUMMARY.

|  |      |
|--|------|
| Total number of samples collected..... | 1834 |
| Total number of samples passed.....    | 1674 |
| Total number of samples deficient..... | 160  |
| Total number of special samples.....   | 49   |
| Total number of samples Naptha.....    | 6    |

### SAMPLES OF KEROSENE.

Number samples of kerosene collected from the following towns during the year 1916:

|                     |    |                     |    |
|---------------------|----|---------------------|----|
| Abbeville .....     | 6  | Easley .....        | 6  |
| Aiken .....         | 13 | Eastover .....      | 1  |
| Allendale .....     | 4  | Edgefield .....     | 7  |
| Anderson .....      | 25 | Ellenton .....      | 1  |
|                     |    | Fillott .....       | 5  |
| Bamberg .....       | 7  | Elloree .....       | 1  |
| Barnwell .....      | 4  | Estill .....        | 4  |
| Batesburg .....     | 9  | Eutawville .....    | 1  |
| Beaufort .....      | 6  | Fairfax .....       | 12 |
| Belton .....        | 5  | Ferguson .....      | 1  |
| Bennettsville ..... | 16 | Florence .....      | 20 |
| Bishopville .....   | 4  | Fort Mill .....     | 1  |
| Blacksburg .....    | 1  | Fort Motte .....    | 1  |
| Blackville .....    | 7  | Fountain Inn .....  | 5  |
| Branchville .....   | 7  | Furman .....        | 2  |
| Brunson .....       | 2  |                     |    |
|                     |    | Gaffney .....       | 16 |
| Cades .....         | 1  | Georgetown .....    | 13 |
| Camden .....        | 10 | Givhans .....       | 1  |
| Cameron .....       | 1  | Graniteville .....  | 1  |
| Carlisle .....      | 2  | Gray Court .....    | 5  |
| Cayce .....         | 1  | Greeleyville .....  | 2  |
| Charleston .....    | 43 | Greenville .....    | 38 |
| Cheraw .....        | 15 | Greenwood .....     | 26 |
| Chester .....       | 20 | Greer .....         | 2  |
| Chesterfield .....  | 3  |                     |    |
| Citnton .....       | 4  | Hampton .....       | 1  |
| Clio .....          | 2  | Harleyville .....   | 1  |
| Columbia .....      | 48 | Hartsville .....    | 8  |
| Conway .....        | 12 | Heath Springs ..... | 1  |
|                     |    | Hemingway .....     | 2  |
| Darlington .....    | 17 | Hodges .....        | 1  |
| Davis Station ..... | 1  | Holly Hill .....    | 1  |
| Denmark .....       | 4  | Honea Path .....    | 6  |
| Dillon .....        | 13 |                     |    |
| Dorchester .....    | 1  | Inman .....         | 1  |
|                     |    | Iva .....           | 2  |

|                        |    |                     |    |
|------------------------|----|---------------------|----|
| Jacksonboro .....      | 1  | Perry .....         | 1  |
| Johnston .....         | 5  | Pickens .....       | 2  |
| Jonesville .....       | 1  | Piedmont .....      | 1  |
| Kershaw .....          | 2  | Ridgeland .....     | 6  |
| Kingstree .....        | 5  | Ridgeville .....    | 3  |
| Lake City .....        | 6  | Ridgeway .....      | 2  |
| Lamar .....            | 1  | Rock Hill .....     | 17 |
| Lancaster .....        | 11 | St. George .....    | 4  |
| Lanes .....            | 2  | St. Matthews .....  | 9  |
| Latta .....            | 1  | Salters .....       | 1  |
| Laurens .....          | 15 | Saluda .....        | 5  |
| Lena .....             | 2  | Scotia .....        | 1  |
| Lexington .....        | 2  | Seneca .....        | 22 |
| Loris .....            | 6  | Simpsonville .....  | 3  |
| Lowrys .....           | 1  | Spartanburg .....   | 31 |
| Lydia .....            | 1  | Springfield .....   | 1  |
| Manning .....          | 16 | Sumter .....        | 23 |
| Marion .....           | 6  | Trenton .....       | 1  |
| McBee .....            | 1  | Union .....         | 17 |
| McColl .....           | 2  | Vance .....         | 1  |
| McCormick .....        | 6  | Varnville .....     | 1  |
| Meggetts .....         | 2  | Wagener .....       | 6  |
| Moncks Corner .....    | 1  | Walhalla .....      | 2  |
| Mullins .....          | 7  | Walterboro .....    | 4  |
| Nelson .....           | 1  | West Union .....    | 1  |
| Newberry .....         | 12 | Williston .....     | 4  |
| North .....            | 7  | Winnsboro .....     | 6  |
| North Augusta .....    | 17 | Woodford .....      | 1  |
| North Charleston ..... | 37 | Woodruff .....      | 6  |
| Orangeburg .....       | 18 | Yemassee .....      | 3  |
| Osborne .....          | 1  | Yonges Island ..... | 6  |
| Pageland .....         | 3  | York .....          | 8  |
| Pelzer .....           | 1  |                     |    |
| Pendleton .....        | 1  |                     |    |

Samples of kerosene collected from the following companies during the year 1916:

|  | Total. | Good. | Deficient. |
|--|--------|-------|------------|
| Standard Oil Co., New Jersey .....               | 379    | 379   | 0          |
| Gulf Refining Co., Jacksonville, Fla. ....       | 232    | 232   | 0          |
| The Texas Co., Port Arthur, Texas .....          | 231    | 231   | 0          |
| Peoples Oil Co., North Augusta, S. C. ....       | 7      | 7     | 0          |
| Cape Fear Oil Co., Wilmington, N. C. ....        | 5      | 5     | 0          |
| Germania Refining Co., Oil City, Pa. ....        | 5      | 5     | 0          |
| Charleston Oil Co., Charleston, S. C. ....       | 5      | 5     | 0          |
| Indian Refining Co., Lawrenceville, Ill. ....    | 4      | 4     | 0          |
| Sapulpa Refining Co., Sapulpa, Okla. ....        | 4      | 4     | 0          |
| Petroleum Oil Co., Anderson, S. C. ....          | 3      | 3     | 0          |
| Standard Oil Co., Kentucky .....                 | 2      | 2     | 0          |
| Peoples Oil Co., Denmark .....                   | 2      | 2     | 0          |
| Filtered Oil Co., Allendale, S. C. ....          | 2      | 2     | 0          |
| Southern States Oil Co., Wagener, S. C. ....     | 2      | 2     | 0          |
| Peoples Oil Co., Lake City .....                 | 2      | 2     | 0          |
| Caddo Oil Refinery, Shreveport, La. ....         | 2      | 1     | 1          |
| Peoples Oil Co., McCormick, S. C. ....           | 1      | 1     | 0          |
| Union Petroleum Oil Co., Chicago, Ill. ....      | 1      | 1     | 0          |
| Louisiana Oil Refinery Co., Shreveport, La. .... | 1      | 1     | 0          |
| Southern States Oil Co., Aiken, S. C. ....       | 1      | 1     | 0          |
| Penn Oil Products Co., Eldridge, Pa. ....        | 1      | 1     | 0          |
| Union Petroleum Oil Co., Chicago, Ill. ....      | 1      | 1     | 0          |
| Petroleum Oil Co., Spartanburg, S. C. ....       | 1      | 1     | 0          |
| Peoples Oil Co., North, S. C. ....               | 1      | 1     | 0          |
| Casden & Co., Tulsa, Okla. ....                  | 1      | 1     | 0          |
| Cudahy Refining Co., Chicago, Ill. ....          | 1      | 1     | 0          |
| Yonges Island Oil Co., Yonges Island, S. C. .... | 1      | 1     | 0          |
| No manufacturer given .....                      | 20     | 19    | 1          |
|  | 918    | 916   | 2          |

**SUMMARY.**

|  |     |
|--|-----|
| Total number of samples collected..... | 918 |
| Total number of samples passed.....    | 916 |
| Total number of samples condemned..... | 2   |
| Total number of special samples.....   | 2   |

Respectfully submitted,

A. C. SUMMERS,  
Chief Chemist.

**CHIEF INSPECTOR'S REPORT.**

*Hon. E. J. Watson, Commissioner of Agriculture, Commerce and Industries, Columbia, S. C.*

Dear Sir: At the end of the fourth year of oil and gasoline inspection in this State, I beg herewith to submit to you, as customary, this, the annual report of the work of the inspectors for the year.

**INSPECTORS.**

Practically all the work of the inspection on the road has been accomplished by the two very efficient oil inspectors and the Department's resident inspector located at the port of Charleston. The two regular inspectors make a complete round of the State at intervals of every three weeks, collecting samples at all oil tank and drum stations, as well as collecting samples here and there from small oil store tanks and filling stations. The resident inspector located in Charleston holds himself ready to meet and collect samples coming in by barge to that port, as well as covering his coastal territory. The writer, in addition to his other duties, holds himself ready to make any point in the State to make any necessary investigations or collect samples.

**INSPECTION.**

The activities of the inspectors can readily be determined by the following:

|   |       |
|---|-------|
| Number of cities or towns visited.....        | 1,306 |
| Number of samples of gasoline collected.....  | 1,834 |
| Number of samples of kerosene collected.....  | 918   |
| Number of samples of naphtha collected.....   | 4     |
| Number of stop orders on gasoline issued..... | 160   |
| Number of stop orders on kerosene issued..... | 2     |



The method of inspection as adopted in this State has proved very satisfactory. It is my firm belief that this State, by its ever alert watchfulness, has placed an absolute ban on low grade gasolines and oils. In a recent conversation with one of the head officials of a large oil company I was informed that the State of South Carolina was getting a much higher grade of gasoline than any other State of the Union and compared the gasoline coming into this State with the high grade product being sold to some of the nations now at war for the use in their aeroplanes. Another oil salesman from a Western State, representing a large independent company, upon having some trouble with one or two shipments into this State, visited this office to get a first hand knowledge of this State's laws and requirements. Upon leaving he voluntarily expressed his opinion that this State, not only had an oil and gasoline law that was effective, but that the inspectors were very active in the discharge of their duties.

#### **GASOLINE VS. NAPHTHA.**

On account of some criticism and confusion over the sale of gasoline in this State as compared with other States, it might be well to briefly treat on the branding and sale of gasoline and naphtha (a low grade gasoline) in this State. Some of the small, independent companies, I learn, have made the statement that they could not buy and sell what is commonly known as Georgia gasoline in this State, that the restrictions thrown around the sale of gasoline placed the independent companies under a serious disadvantage as compared with our border States.

This kind of statement is without foundation, as the present requirements for the product "gasoline" are:

Residue—Not more than 8 per cent. at 150 degrees C.

Distillation—Not less than 25 per cent. at 110 degrees C.

Flash Test—Not more than 32 degrees F.

The residue minimum fixed carries with it the specific gravity, and, therefore, no minimum of standard gravity is specially fixed.

All gasoline sold within this State has to come up to the above standards, but should any oil company or individual desire to sell products coming below this standard, all they have to do is to brand this product "naphtha." By this required branding, all individuals and oil companies are placed on an equal basis from a competitive standpoint, and all consumers of the State are

assured by looking at the labeling that they are getting just exactly what they are buying. Then if the consumer wants to buy a cheaper product, let him ask for and receive "naphtha" (a low grade gasoline). This product has been offered for sale from time to time since this law went into effect, but invariably for only a short time.

#### KEROSENE.

Practically no trouble has occurred in the inspection of kerosene this year. In all but one or two cases, which will be reported by the laboratory, we have found this class of product coming up to the State standards. However, the inspectors are continuing to keep up active inspection and are collecting samples of each shipment into this State.

#### OIL REGISTRATIONS.

| Name of Company.             | Location.             | Name of Product Registered.  |
|------------------------------|-----------------------|--|
| Ball, Chas. E.....           | Savannah, Ga.....     | Crown Gasoline.<br>Fireproof Oil.  |
| Charleston Oil Co.....       | Charleston, S. C..... | Sun-Light Oil (Kerosene).<br>Gasoline.   |
| Cape Fear Oil Co.....        | Wilmington, N. C..... | Water White 150° F. T. Oil.<br>Prince White 150° F. T. Oil.<br>Gasoline.<br>300° F. T. Oil for Railroads only.<br>Signal Oil for Railroads only.                   |
| Caddo Oil Refinery.....      | Shreveport, La.....   | Kerosene.<br>Naphtha.<br>Gasoline.   |
| Casden & Co.....             | Tulsa, Okla.....      | Kerosene.<br>Naphtha.<br>Gasoline.   |
| Campion, J. F.....           | Tulsa, Okla.....      | 60/61 Gravity Straight Run Gasoline not over 8% residue at 150°.   |
| Douglass, John W.....        | Allendale, S. C.....  | Gasoline.<br>Kerosene.<br>Naphtha.   |
| Economy Oil Co.....          | Charleston, S. C..... | Gasoline.<br>Kerosene.   |
| Emery Mfg. Co.....           | Bradford, Pa.....     | Gasoline.<br>Kerosene.   |
| Freedom Oil Works.....       | Freedom, Pa.....      | Kerosene.<br>Gasoline.   |
| Germania Refining Co.....    | Oil City, Pa.....     | 150° Water White 47° to 49°.<br>Gasolines.<br>Naphtha.   |
| Gulf Refining Co.....        | Atlanta, Ga.....      | Carolina Kerosene.<br>Radium (Kerosene).<br>"That Good Gulf Gasoline."<br>Naphtha.   |
| Indian Refining Co.....      | Columbia, S. C.....   | Starlight Burning Oil<br>Color: Prime White.<br>Bluegrass Burning Oil<br>Color: Water White.<br>Indian Fancy Burning Oil<br>Color: Water White.<br>Royal Gasoline. |
| Lubric Oil Co., The.....     | Cleveland, Ohio.....  | Vulcan Gasoline.<br>Naphtha.   |
| Lake Park Refining Co.....   | Sapulpa, Okla.....    | Gasoline.<br>Kerosene.   |
| Peoples Oil Co.....          | Augusta, Ga.....      | Gasoline.<br>Kerosene.   |
| Petroleum Products Sales Co. | Cleveland, O.....     | Petrosales Gasoline.<br>Vulcan Gasoline.   |

| Name of Company.  | Location.            | Name of Product Registered.   |
|---|----------------------|---|
| Phoenix Refining Co.....                                    | Tulsa, Okla.....     | "Top Notch" Gasoline.<br>"Top Notch" Naphtha.   |
| Pennsylvania Oil Products<br>Refining Co.....               | Eldred, Pa.....      | "Top Notch" Kerosene.<br>Duke Gasoline.<br>Eldred Naphtha.<br>Haymaker—Waterwhite Kerosene.<br>Gasoline.<br>Naphtha.  |
| Petroleum Oil Co.....                                       | Anderson, S. C.....  | Kerosene, Water White or Crystal Oil.   |
| The Red "C" Oil Mfg. Co.....                                | Baltimore, Md.....   | Oils: Auro White, Auro Red,<br>White Astral, The White "C,"<br>The Red "C."<br>Gasolines: Mechanical, Commercial, Premium, Speedway, Benzine.   |
| Robinson, Wm. C. & Son Co...                                | Baltimore, Md.....   | "Naphtha," a petroleum product for use in gasoline engines.<br>"Saw Oil," "Vigoro" Gasoline.<br>"Motor."<br>150° Water White Oil.<br>Brilliant Illuminating Oil.  |
| Standard Oil Co. (N. J.)....                                | Baltimore, Md.....   | Water White Oil<br>(Kerosene Oil).<br>Prime White Oil<br>(Kerosene Oil).<br>Standard White Oil<br>(Kerosene Oil).<br>Aladdin Security Oil<br>(Kerosene Oil).<br>Diamond White Oil<br>(Kerosene Oil).<br>Long Time Burner Oil<br>(Kerosene Oil).<br>Mineral Seal Oil<br>(Illuminating Oil).<br>Deodorized Gasoline<br>(Gasoline).<br>Standard Motor Gasoline<br>(Gasoline).<br>Engine Distillate<br>(Naphtha).<br>Petroleum Refined Oil<br>(Kerosene Oil).<br>Deodorized Naphtha<br>(Naphtha).<br>Standard Oil Company Lantern Oil (Illuminating Oil). |
| Standard Oil Co. (Ky.).....                                 | Louisville, Ky.....  | Water White 150°.<br>Fireproof Oil (Brand for Water White 150°).<br>Deodorized Gasoline.<br>Crown Gasoline (Brand for Deodorized Gasoline).<br>Engine Gasoline.<br>VM&P Naphtha.<br>Water White Kerosene Oils.<br>Deodorized Gasoline.  |
| Southern States Oil Co., J. B.<br>Cushman's Sons, Prop..... | Alken, S. C.....     | Kerosene.<br>Gasoline.<br>Naphtha.<br>Gasoline.<br>Naphtha.<br>Gasoline.<br>Naphtha.<br>Gasoline.<br>Illuminating Oil.  |
| Sapulpa Refining Co.....                                    | Sapulpa, Okla.....   | Gasoline.<br>Naphtha.<br>Kerosene.  |
| Titusville Oil Works, The....                               | Titusville, Pa.....  | Gasoline.<br>Naphtha.   |
| United Refining Co.....                                     | Warren, Pa.....      | Gasoline.<br>Illuminating Oil.  |
| Union Petroleum Co.....                                     | Philadelphia, Pa.... | Gasoline.<br>Naphtha.<br>Kerosene.  |

#### GASOLINE AND OIL STATIONS.

| Location.       | Tank Stations.  | Drum Stations. |
|-----------------|---|----------------|
| Abbeville ..... | Standard Oil Company.....<br>The Texas Company.....                             |                |
| Alken .....     | Standard Oil Company.....<br>Southern States Oil Co.....<br>D. B. Plunkett..... |                |
| Anderson .....  | Standard Oil Company.....   |                |

| Location.           | Tank Stations.                   | Drum Stations.    |
|---------------------|----------------------------------|-------------------|
|                     | The Texas Company.....           |                   |
|                     | Petroleum Oil Company.....       |                   |
| Allendale .....     | Filtered Oil Company.....        |                   |
| Bamberg .....       | Standard Oil Company.....        | Gulf Refining Co. |
| Barnwell .....      | Southern States Oil Co.....      |                   |
| Batesburg .....     | Gulf Refining Company.....       |                   |
|                     | Standard Oil Company.....        |                   |
| Belton .....        |                                  | Gulf Refining Co. |
| Bennettsville ..... | Standard Oil Company.....        |                   |
|                     | Gulf Refining Company.....       |                   |
|                     | The Texas Company.....           |                   |
| Blacksburg .....    | Standard Oil Company.....        |                   |
| Blackville .....    | Standard Oil Company.....        |                   |
| Branchville .....   | Standard Oil Company.....        |                   |
| Camden .....        | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Gulf Refining Company.....       |                   |
| Clio .....          | Standard Oil Company.....        |                   |
| Cheraw .....        | Standard Oil Company.....        |                   |
|                     | Gulf Refining Company.....       |                   |
| Chester .....       | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Gulf Refining Company.....       |                   |
| Clinton .....       | Standard Oil Company.....        | Gulf Refining Co. |
|                     | The Texas Company.....           |                   |
| Columbia .....      | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Gulf Refining Company.....       |                   |
|                     | Peoples Oil Company.....         |                   |
|                     | Indian Refining Company.....     |                   |
| Conway .....        |                                  | Standard Oil Co.  |
|                     |                                  | A. T. Collins Co. |
| Darlington .....    | Standard Oil Company.....        |                   |
|                     | Gulf Refining Company.....       |                   |
| Denmark .....       | Peoples Oil Company.....         |                   |
| Dillon .....        | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Gulf Refining Company.....       |                   |
| Estill .....        | Filtered Oil Company.....        | Gulf Refining Co. |
| Easley .....        | Standard Oil Company.....        |                   |
| Edgefield .....     | Standard Oil Company.....        |                   |
|                     | Peoples Oil Company.....         |                   |
| Elliott .....       | Standard Oil Company.....        |                   |
| Eastover .....      |                                  | Standard Oil Co.  |
| Ellenton .....      | Southern States Oil Company..... |                   |
| Fairfax .....       | Standard Oil Company.....        |                   |
| Florence .....      | Standard Oil Company.....        |                   |
|                     | Peoples Oil Company.....         |                   |
|                     | R. E. G. Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
| Fort Mill.....      | Standard Oil Company.....        |                   |
| Furman .....        |                                  | Standard Oil Co.  |
| Fountain Inn.....   | Standard Oil Company.....        |                   |
| Gaffney .....       | Standard Oil Company.....        |                   |
|                     | Gulf Refining Company.....       |                   |
| Greenville .....    | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Petroleum Oil Company.....       |                   |
| Greenwood .....     | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
|                     | Gulf Refining Company.....       |                   |
| Greer .....         | Standard Oil Company.....        |                   |
| Kershaw .....       | Standard Oil Company.....        |                   |
| Hartsville .....    | Standard Oil Company.....        |                   |
| Honea Path.....     | Standard Oil Company.....        |                   |
| Iva .....           |                                  | Standard Oil Co.  |
| Johnston .....      | Southern States Oil Company..... |                   |
|                     | The Texas Company.....           |                   |
| Jefferson .....     |                                  | Standard Oil Co.  |
| Kershaw .....       | Standard Oil Company.....        |                   |
| Lancaster .....     | Standard Oil Company.....        |                   |
|                     | The Texas Company.....           |                   |
| Liberty .....       | Standard Oil Company.....        |                   |
| Loris .....         |                                  | Standard Oil Co.  |
| Manning .....       | Standard Oil Company.....        | Gulf Refining Co. |
| Mullins .....       | Standard Oil Company.....        |                   |
| Marion .....        | Standard Oil Company.....        |                   |
|                     | Gulf Refining Company.....       |                   |

| Location.          | Tank Stations.                    | Drum Stations.    |
|--------------------|-----------------------------------|-------------------|
| McCormick .....    | Standard Oil Company.....         |                   |
|                    | Peoples Oil Company.....          |                   |
| Newberry .....     | Standard Oil Company.....         |                   |
|                    | Summer Bros. Company.....         |                   |
| North .....        | Peoples Oil Company.....          |                   |
|                    | Standard Oil Company.....         |                   |
| North Augusta..... | Peoples Oil Company.....          |                   |
| Orangeburg .....   | Standard Oil Company.....         |                   |
|                    | Gulf Refining Company.....        |                   |
|                    | The Texas Company.....            |                   |
| Pageland .....     | The Texas Company.....            |                   |
| Pelzer .....       | Standard Oil Company.....         |                   |
| Rock Hill.....     | Standard Oil Company.....         |                   |
|                    | Gulf Refining Company.....        |                   |
| Saluda .....       |                                   | Gulf Refining Co. |
|                    |                                   | Standard Oil Co.  |
| Seneca .....       | Standard Oil Company.....         |                   |
|                    | The Texas Company.....            |                   |
|                    | Gulf Refining Company.....        |                   |
| Spartanburg .....  | Standard Oil Company.....         |                   |
|                    | The Texas Company.....            |                   |
|                    | Petroleum Oil Company.....        |                   |
| St. Matthews.....  | Standard Oil Company.....         |                   |
| Sumter .....       | Standard Oil Company.....         |                   |
|                    | The Texas Company.....            |                   |
|                    | Gulf Refining Company.....        |                   |
|                    | Jenkins Auto Specialty Company... |                   |
| Union .....        | Standard Oil Company.....         |                   |
|                    | Gulf Refining Company.....        |                   |
|                    | The Texas Company.....            |                   |
| Walhalla .....     | Standard Oil Company.....         |                   |
| Winnsboro .....    | Standard Oil Company.....         |                   |
| Wagener .....      | Southern States Oil Company.....  | Standard Oil Co.  |
|                    | E. S. Redd.....                   |                   |
| Woodruff .....     | Standard Oil Company.....         |                   |
| Yorkville .....    | Standard Oil Company.....         |                   |

Note: The above list are regular stations. In additions to these, merchants scattered over the different parts of the State occasionally buy car lots in drums.

#### CONCLUSION.

I am glad to be able to report that I believe that we have this line of inspection well in hand, and that there is no possibility of the consumers of the State being defrauded. Your inspectors have continued to perform their duties both cheerfully and willingly and the results of their work has proven very satisfactory.

They desire, through the writer, to convey their thanks to the entire Department for all courtesies extended.

Very truly yours,

S. M. SLOAN,  
Chief Inspector.

## XVI.—CEREAL, FORAGE AND INSECT WORK.

During the year the effective work of the United States Entomological Station for the Southeast, located at Columbia, with P. Luginbill in charge, was continued. Another assistant was assigned during the year, making two assistants now assigned to the Station.

In the absence of an official report, only a brief outline of the work done can be given.

No serious outbreaks of insects affecting cereal and forage crops were reported to the Station during the early part of the year 1916. However, later on in the year, considerable damage was done to various crops by insects, the most important of which are given below:

True Army Worm (*Cirphus unipuncta*).—These worms did considerable damage to a field of millet near Columbia. The farmer was able to save part of the crop by cutting it. A close watch was kept, and the place was frequently thoroughly inspected, and it was found that the parasites which prey upon these larvæ were getting more and more abundant, so that by the time the next generation appeared, little further damage was done. However, the species appears to be quite common in fields, even at this time. Laboratory work has been continued, and further data on the life history and habits have been recorded. A study of some of the parasites attacking and preying upon these worms has also been made. Quite a little attention will be given to this species the coming year (1917), as there are still some points as to this species that need to be found out.

Fall Army Worm (*Laphygma frugiperda*).—During late summer the larvæ of this species were quite common, yet not abundant enough to do serious damage to crops. Laboratory work on this species was continued and further data on this pest has been gathered. Some of the parasites common to this species have also been studied, as in the case of the True Army Worm.

Late in the fall of the year 1915 cages were placed in different points in South Carolina, as well as in Georgia, in fields which were sown to oats, and later on in the year stocked with a large number of worms. The object of these experiments was to deter-

mine the points at which the species will hold over or pass the winter. Inspections were made in the spring of 1916, and not a thing could be found in any of the cages. This would seem to substantiate the previous belief that the species does not pass the winter in these regions at all, but comes to us every year as a migrant from more southerly regions, presumably Florida. However, the experts have again stocked some of these cages this year (1916) for another trial.

A Bulletin on this species has recently been prepared, in which is given a brief history, descriptions of the different stages and, above all, methods of control in full. This Bulletin can be obtained by writing to the United States Department of Agriculture.

**Bill Bugs (*Sphenophorous Sp.*).—**These bugs have again done considerable damage to corn in the bottom lands along the Pee Dee River near Cheraw, and along the Congaree River near Columbia. Further data on the life history of these insects has been gathered both in the field and the laboratory.

**Lesser Corn Stalk Borer (*Elasmopalpus lignosellus*).—**This species has again damaged cow peas and sorghum in fields around Columbia. As has been previously discovered, plants growing in the sandy portions of the fields suffer the most. This makes this species doubly injurious, as the nature of the soil is such that, if not heavily fertilized, it produces inferior plant growth, even if exempt from insect attack.

A Bulletin on this species has just been completed and will be issued soon by the Bureau of Entomology, which will give a complete description of the species in its different stages; also methods of control.

***Halticus citrii*.—**This is a little black bug which has been found doing considerable damage to alfalfa in Georgia. It has just recently been found in alfalfa fields around Columbia. The life history and habits as well as methods of control have been recorded and solved, and the results will appear shortly in a Bulletin of the Bureau of Entomology, so if it ever becomes injurious in these parts we will know what to do to control it.

This Station has started a piece of investigational work on *Dia-brotica 12-punctata*, commonly known as the Southern Corn Root-Worm, or "Bud Worm," an enemy of corn. This is one of the most injurious insects of corn to be found in the South. It will probably take at least three years to complete this work satisfactorily.

## **XVII.—FORESTRY AND MINERALS.**

The State has as yet taken no steps looking to the conservation of her forests. The only conservation work is that being done by several of the large lumber companies in reforesting their Southern Pine holdings, and by the Federal Government in condemning and taking in lands under the Appalachian Forestry Reserve measure, work under which was begun in 1911. All of this, however, lies well up on the mountain sides in Oconee and Pickens counties. This year some 7,678 acres were taken over on the North Carolina side of the line. The work in this State is progressing but slowly. Authorization for the purchase of a total of 25,508 acres in this State has been given, and there have been surveyed 17,066 acres for condemnation.

Under the new Federal Roads Act a small amount is to go to the building of Government highways in the Forestry Reserve, but the amount set aside thus far for this State is very small.

### **THE LUMBER INDUSTRY.**

During 1915, 800 saw mills were operating in the State, and they cut 800,000,000,000 feet of lumber. Thirty-seven of these plants cut over 5,000,000,000 feet each. Nearly all of the cut was yellow pine. This year the lumber industry revived considerably and yielded handsome returns.

### **BOXES, BASKETS AND CRATES.**

This industry has now grown to very considerable proportions, and is steadily increasing.

### **VENEER PLANTS.**

Several veneer plants have moved into South Carolina, to such points as Columbia and Camden, and they are being operated most successfully.

### **MINING.**

A glance at the manufacturing report of this Department will give full information as to the mining in progress in the State, which consists of phosphates and kaolin.

The fertilizer industry has recovered considerably.



Recently the kaolin mines in Richland County have been taken over by a strong company, and will be operated on a business-like basis.

Near Columbia a fine drainage and building tile plant has been successfully launched, and is rapidly building a reputation for its products.

The important event of the year in the mining world was the opening of the fine marl beds on the Ashley, and the erection of a plant to manufacture the material. This, however, is more fully dealt with elsewhere in this report.

## **XVIII.—CONCLUSION.**

In concluding this general report of the many and varied activities of this Department I have endeavored to so present the essentials that a comprehensive grasp of the constructive work of the State may be had. I trust I have done so intelligently and adequately.

The scope of the work of the Department is broad and touches nearly every field of constructive endeavor. However, the varied lines are all more or less correlated, and designed to accomplish a common purpose—the fullest development of the agricultural and industrial resources of the State and the conservation of the human resources of the commonwealth; in a word, to increase the annual production of wealth and to secure a betterment of the conditions of life.

Every man in the Department has labored earnestly to do his full duty. The men have not merely sought to earn their salaries; they have to a man thrown all their energy into the performance of their duties, feeling that upon each unit of activity rested the burden of responsibility to the people. We have not wasted time experimenting with theories; we have gone in a clear-cut business manner after results, and I believe we have gotten them and are destined to get even better.

Your Commissioner has given his all of ability and mental and physical endurance to the prosecution of the work and has been most appreciative of the earnest support given him by the General Assembly, other State officers and institutions and the members of the Departmental staff. Practically no one in the Department from the Commissioner down is paid a living wage, measured by the present high cost of living in the capital city, but I am happy to say there has been no complaint and no diminution of energy. The men love their State and their work, appreciate its value to the people and are doing their best in every field.

Respectfully submitted,

E. J. WATSON,  
Commissioner.

## APPENDIX I.

**CLASSIFIED SUMMARY OF DISBURSEMENTS OF FUND DERIVED FROM  
TAX ON COMMERCIAL FEED STUFFS, 1916.**

(Includes Part of Contingent Fund Account and Part of Factory Inspectors' Salary and Expense Accounts, as per Provisions of Appropriation Act of 1916.)

|  |                    |                    |
|--|--------------------|--------------------|
| Amount on deposit with State Treasurer Jan. 1, 1916.   |                    | \$2,435 88         |
| Amount collected twelve months ending Dec. 31, 1916.   |                    | 26,703 45          |
| Apparatus and supplies for Feed Stuffs Laboratory..  | \$954 73           |                    |
| Salary of two Assistant Chemists.....  | 2,378 32           |                    |
| Salary of seven Inspectors.....  | 8,794 88           |                    |
| Traveling expenses of Inspectors and Commissioner.   | 2,508 39           |                    |
| Mileage for Inspectors and Commissioner.....   | 1,020 00           |                    |
| Tax stamps, printing, stationery and office supplies.  | 2,000 47           |                    |
| Freight and drayage on condemned Feed Stuffs and<br>Feed Tags and Hooks.....   | 114 89             |                    |
| Part operating expenses of Laboratory.....   | 302 08             |                    |
| Redemption of Tax Stamps returned unused.....  | 117 25             |                    |
| Telephone service.....   | 132 59             |                    |
| Telegraph service.....   | 150 08             |                    |
| Postage Stamps and Stamped Envelopes.....  | 553 04             |                    |
| Premium on Bonds of Commissioner and three<br>Inspectors.....  | 117 50             |                    |
| Supplies, storage and repairs and expense of Motor<br>Car travel.....  | 987 41             |                    |
| Subscriptions to Papers, Clipping Bureaus and Dues<br>to Associations.....   | 27 55              |                    |
| Part of supplies and expenses of State Exhibit.....  | 64 55              |                    |
| Extra help and labor.....  | 65 79              |                    |
| Salary of one Factory Inspector (Special Factory<br>Inspector's Salary account).....   | 1,200 00           |                    |
| Mileage and traveling expenses of one Factory In-<br>spector (Special Factory Inspector's traveling<br>expense account)..... | 500 00             |                    |
| Highway Maps and supplies and expenses of Posting<br>Highways (Special Contingent Fund).....                                 | 303 76             |                    |
| State Treasurer for Conversion into General Account<br>of the State.....   | 4,000 00           |                    |
|  | <u>\$26,293 28</u> |                    |
| Balance on deposit with State Treasurer.....   | 2,846 05           |                    |
|  | <u>\$29,139 33</u> | <u>\$29,139 33</u> |

**CLASSIFIED SUMMARY OF DISBURSEMENTS OF FUND DERIVED FROM  
TAX ON OIL, 1916.**

(Includes Part of Contingent Fund Account and Part of Factory Inspectors' Salary and Expense Accounts as per Provisions of Appropriation Act of 1916.)

|  |                    |                    |
|--|--------------------|--------------------|
| Amount on deposit with State Treasurer, Jan. 1, 1916.  |                    | \$2,079 99         |
| Amount collected twelve months ending Dec. 31, 1916.   |                    | 25,347 36          |
| Supplies for Laboratory.....   | \$76 29            |                    |
| Part salaries Chemist and Assistant Chemists.....  | 3,715 98           |                    |
| Salary of two Inspectors.....  | 2,400 00           |                    |
| Salary of Stenographer and extra help.....   | 1,993 33           |                    |
| Traveling expenses Inspectors, Commissioner and<br>Special Representatives.....                                    | 2,079 97           |                    |
| Mileage for Inspectors, Commissioner and Special<br>Representatives.....   | 1,086 60           |                    |
| Printing, stationery and office supplies.....  | 1,492 17           |                    |
| Postage Stamps and Stamped Envelopes.....  | 1,291 64           |                    |
| Telegraph service.....   | 347 68             |                    |
| Telephone service.....   | 66 95              |                    |
| Refund of Tax on Oil Shipped out of State.....   | 278 43             |                    |
| Premium on Bond of Inspectors.....   | 75 00              |                    |
| Part of operating expenses of Laboratory.....  | 331 94             |                    |
| Supplies and repairs for Automobile.....   | 1,555 77           |                    |
| Part of supplies and expenses of State Exhibit.....  | 326 01             |                    |
| Salary of one Factory Inspector (Special Fund).....  | 1,200 00           |                    |
| Traveling expenses and mileage of one Factory In-<br>spector (Special Factory Inspector's expense<br>account)..... | 500 00             |                    |
| Highway Maps and expense of Posting Highways...  | 669 91             |                    |
| Subscriptions to Papers and Dues to Associations<br>(Special Contingent Fund).....                                 | 50 00              |                    |
| Conversion into the General Fund of the State.....   | <u>\$6,000 00</u>  |                    |
| Balance on Deposit with State Treasurer.....   | 1,889 68           |                    |
|  | <u>\$27,427 35</u> | <u>\$27,427 35</u> |

**CLASSIFIED SUMMARY OF DISBURSEMENTS "SPECIAL (\$4,000.00)  
CONTINGENT FUND."**

(Paid from Funds from Feed and Oil Accounts, as per Provisions of Appropriation Act of 1916, and also included in Statement of Those Accounts.)

|   |            |            |
|---|------------|------------|
| Supplies and Maintenance of State Exhibit.....      | \$392 06   |            |
| Subscriptions to Papers, Periodicals and Clipping   |            |            |
| Bureaus .....                                       | 29 30      |            |
| Dues to Associations.....                           | 50 00      |            |
| Highway Maps and Posting Highways.....              | 973 67     |            |
| Travelling Expenses of Commissioner.....            | 278 34     |            |
| Laboratory Repairs by Carpenter.....                | 28 67      |            |
| Printing Bulletins, Reports, Advertising and Office |            |            |
| Expenses .....                                      | 1,318 07   |            |
| Premium on Bond of Commissioner.....                | 80 00      |            |
|   | <hr/>      | <hr/>      |
|   | \$3,150 10 | \$3,150 10 |

**APPENDIX II**

**DETAILED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF FUND  
DERIVED FROM TAX ON COMMERCIAL FEED STUFFS, 1916.**

**RECEIPTS.**

|  |            |             |
|--|------------|-------------|
| Balance on Deposit with State Treasurer, Jan. 1, 1916. |            | \$2,435 83  |
| Feb. 1, by Deposit with State Treasurer .....          | \$1,929 30 |             |
| Mar. 1, by Deposit with State Treasurer .....          | 903 82     |             |
| Apr. 1, by Deposit with State Treasurer .....          | 2,029 31   |             |
| May 1, by Deposit with State Treasurer .....           | 1,469 57   |             |
| June 1, by Deposit with State Treasurer .....          | 1,956 31   |             |
| July 1, by Deposit with State Treasurer .....          | 1,578 76   |             |
| Aug. 1, by Deposit with State Treasurer .....          | 1,653 59   |             |
| Sept. 1, by Deposit with State Treasurer .....         | 2,023 77   |             |
| Oct. 1, by Deposit with State Treasurer .....          | 3,660 66   |             |
| Nov. 1, by Deposit with State Treasurer .....          | 4,507 69   |             |
| Dec. 1, by Deposit with State Treasurer .....          | 2,951 63   |             |
| Dec. 30, by Deposit with State Treasurer .....         | 2,039 04   |             |
|  | <hr/>      | <hr/>       |
|  |            | \$26,703 45 |
|  |            | <hr/>       |
|  |            | \$29,139 33 |

**DISBURSEMENTS.**

|   |         |
|---|---------|
| Jan. 1. Warrant 1, Southern Express Co., C. O. D.<br>Express, parts for Automobile.....                             | \$28 46 |
| 3. Warrant 2, C. M. Scott, U. T. A., 1,000 mile-<br>age for S. M. Sloan, Inspector.....                             | 20 00   |
| 6. Warrant 3, Southern Ry. Co., Freight on<br>Seized Feed Stuffs, D-209.....  | 1 02    |
| 6. Warrant, 4, B. Harris, Inspector, Traveling<br>Expenses, statement attached.....                                 | 45 95   |
| 8. Warrant 5, A. P. Brown, Freight and Drav-<br>age on two cases Feed Tax Tags, bill<br>attached .....              | 8 33    |
| 8. Warrant 6, C. M. Scott, U. T. A., 1,000 Mile-<br>age for Inspector Woodward.....                                 | 20 00   |
| 8. Warrant 7, C. M. Scott, U. T. A., 1,000 Mile-<br>age for Inspector Blackwell.....                                | 20 00   |
| 10. Warrant 8, Geo. H. Huggins, Postmaster,<br>1,000 1c. white Stamped Envelopes, No. 8.                            | 11 56   |
| 14. Warrant 9, Seaboard Air Line Ry., 1,000<br>Mileage for Inspector Harris.....                                    | 20 00   |
| 14. Warrant 10, C. M. Tew, Auditor, Gas and<br>Electricity for December, bills attached.                            | 11 40   |
| 14. Warrant 11, J. H. Woodward, Inspector,<br>Traveling Expenses, statement attached.                               | 40 00   |
| 14. Warrant 12, The State Co., Printing Tax<br>Stamps and Office Supplies, bill attached.                           | 94 25   |
| 15. Warrant 13, W. P. Blackwell, Inspector,<br>Traveling Exrnenses, statement attached.                             | 40 00   |
| 15. Warrant 14, A. P. Treadwell, 1616 Healey<br>Bldg., Atlanta, Ga., Redemption of 1,000<br>No. 100 Tax Stamps..... | 12 50   |
| 19. Warrant 15, G. M. Carpenter, Stationery and<br>Office Supplies, bill attached.....                              | 7 90    |

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|------|---|--------|
| 19.  | Warrant 16, Southern Bell Telephone Co., Telephone Service, bills attached.....   | 13 10  |
| 19.  | Warrant 17, Capital City Laundry, Towel Service, Oct., Nov., Dec., bills attached..   | 3 00   |
| 21.  | Warrant 18, Jas. D. Lee, Expense Account, statement attached .....  | 2 69   |
| 25.  | Warrant 19, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Woodward.....  | 20 00  |
| 27.  | Warrant 20, Jas. D. Lee, Freight on Feed Stuffs Seized .....  | 2 38   |
| 29.  | Warrant 21, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
| 29.  | Warrant 22, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Blackwell.....   | 20 00  |
| 29.  | Warrant 23, W. P. Blackwell, Inspector, Salary for January, Dated February 1.....   | 100 00 |
| Feb. | 1. Warrant 24, S. M. Sloan, Inspector, Salary for January .....   | 141 66 |
|      | 1. Warrant 25, Jas. Land, Jr., Inspector, Salary for January .....  | 100 00 |
|      | 1. Warrant 26, J. R. Jones, Inspector, Salary for January .....   | 120 83 |
|      | 1. Warrant 27, B. Harris, Inspector, Salary for January .....   | 100 00 |
|      | 1. Warrant 28, R. M. Simpson, Assistant Chemist, Salary for January.....  | 108 33 |
|      | 1. Warrant 29, C. L. Adams, Assistant Chemist, Salary for January.....  | 85 00  |
|      | 1. Warrant 30, T. T. Huffman, Inspector, Salary for January.....  | 80 00  |
|      | 1. Warrant 31, Jas. D. Lee, for Nathan Burkett, Carpenter, Expense Account for January, statement attached .....              | 29 00  |
|      | 4. Warrant 32, B. Harris, Inspector, Traveling Expenses, statement attached.....  | 55 55  |
|      | 4. Warrant 33, Southern Ry. Co., 1,000 Mileage for B. Harris, Inspector.....  | 20 00  |
|      | 5. Warrant 34, The State Co., Printing Tax Stamps and Office Supplies, bill attached .....                                    | 54 00  |
|      | 5. Warrant 35, W. F. Blackwell, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|      | 8. Warrant 36, C. M. Tew, Auditor, Gas and Electricity for January, bills attached..  | 10 65  |
|      | 8. Warrant 37, Southern Bell Telephone Co., Telephone Service, bill attached.....   | 12 25  |
|      | 8. Warrant 38, Western Union Telegraph Co., Telegraph Service, bills attached.....  | 27 71  |
|      | 11. Warrant 39, Peoples Oil Co., Supplies for Automobile, to February 1, bill attached .....                                  | 47 78  |
|      | 11. Warrant 40, The Murray Drug Co., Supplies for Laboratory, bill attached.....  | 16 95  |
|      | 11. Warrant 41, W. R. Hartin, Automobile Repairs, bill attached .....   | 3 50   |
|      | 11. Warrant 42, Paul H. Glenn, Automobile Repairs, bill attached.....   | 6 00   |
|      | 11. Warrant 43, Postal Telegraph-Cable Co., Telegraph Service, bill attached.....   | 2 34   |
|      | 11. Warrant 44, Columbia Carbon Co., 1 Box Carbon for Office, bill attached.....  | 3 00   |
|      | 16. Warrant 45, Seaboard Air Line Ry., 1,000 Mileage for Inspector Blackwell.....   | 20 00  |
|      | 18. Warrant 46, S. M. Sloan, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
|      | 23. Warrant 47, Geo. H. Huggins, P. M., 4,000 2c. Stamped Envelopes, No. 5.....   | 84 96  |
|      | 25. Warrant 48, W. S. Bonner, Factory Inspector, Salary, January.....   | 100 00 |
|      | 25. Warrant 49, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....                                 | 40 00  |
|      | 25. Warrant 50, C. M. Scott, U. T. A., 1,000 Mileage for W. S. Bonner, Factory Inspector.....                                 | 20 00  |
|      | 26. Warrant 51, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....                                       | 40 00  |
|      | 26. Warrant 52, C. M. Scott, U. T. A., 1,000 Mileage for B. Harris, Inspector.....  | 20 00  |
|      | 28. Warrant 53, E. C. Bridgman, Publisher, 86 Warren St., New York City, 213 Copies Maps of State of S. C., 1915 Edition..... | 34 00  |
|      | 28. Warrant 54, W. H. Coleman, P. M., 2,000 1c. White Stamped Envelopes, No. 8.....   | 23 12  |

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|-----|--|--------|
| Mar | 1. Warrant 55, S. M. Sloan, Inspector, Salary, February .....  | 141 66 |
|     | 1. Warrant 56, J. R. Jones, Inspector, Salary, February .....  | 120 83 |
|     | 1. Warrant 57, B. Harris, Inspector, Salary, February .....  | 100 00 |
|     | 1. Warrant 58, W. P. Blackwell, Inspector, salary, February .....  | 100 00 |
|     | 1. Warrant 59, Jas. Land, Jr., Inspector, salary, February .....   | 100 00 |
|     | 1. Warrant 60, R. M. Simpson, Assistant Chemist, Salary, February .....  | 108 33 |
|     | 1. Warrant 61, C. L. Adams, Assistant Chemist, Salary, February .....  | 85 00  |
|     | 1. Warrant 62, T. T. Huffman, Inspector, Salary, February .....  | 80 00  |
|     | 1. Warrant 63, W. S. Bonner, Inspector (Factory), Salary, February .....   | 100 00 |
|     | 1. Warrant 64, T. T. Huffman, Inspector, Expense of Motor Car Travel and Repairs, statement attached .....                               | 40 00  |
|     | 1. Warrant 65, J. Roy Jones, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
|     | 1. Warrant 66, Jas. D. Lee, Clerical Help, Expense Account, statement attached .....   | 2 10   |
|     | 2. Warrant 67, Seaboard Air Line Ry., 1,000 Mileage for J. Roy Jones, Inspector .....  | 20 00  |
|     | 2. Warrant 68, The News and Courier Co., Charleston, S. C., Subscription 3/19/15-3/19/16, bill attached .....                            | 8 00   |
|     | 3. Warrant 69, A. C. Summers, Chemist, Operating Expenses of Laboratory for February, bill attached .....                                | 35 25  |
|     | 3. Warrant 70, Ben Wallace, Porter, Wages for February .....   | 32 00  |
|     | 3. Warrant 71, B. Harris, Inspector, Traveling Expenses, statement attached .....  | 65 10  |
|     | 4. Warrant 72, Jas. D. Lee, Freight on Feed Stuff Seized, statement attached .....   | 3 87   |
|     | 10. Warrant 73, The State Co., Books, Blanks and Office Supplies, statement attached .....   | 78 85  |
|     | 10. Warrant 75, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes No. 8, \$57.80, 1,000 2c. Stamps, 100 5c. Stamps, 50 10c. Stamps ..... | 87 80  |
|     | 10. Warrant 74, The State Co., Printing 700 Copies Seventh Annual Report, Cuts, Maps, etc. ....  | 160 30 |
|     | 11. Warrant 76, Southern Bell Telephone Co., Telephone Service, bills attached .....   | 14 75  |
|     | 11. Warrant 77, Southern Ry. Co., 1,000 Mileage each for S. M. Sloan and W. P. Blackwell, Inspectors .....                               | 40 00  |
|     | 11. Warrant 78, Arthur H. Thomas Co., West Washington Square, Philadelphia, Pa., Laboratory Supplies, account in full .....              | 272 62 |
|     | 11. Warrant 79, Underwood Typewriter Co., Inc., Charlotte, N. C., Rent of Underwood No. 5/496317, 12/29/15-1/29/16 .....                 | 3 00   |
|     | 11. Warrant 80, W. B. Guilmarin & Co., Laboratory Supplies, bill attached .....  | 5 15   |
|     | 11. Warrant 81, Columbia Ice and Fuel Co., Ice Coupons, bill attached .....  | 5 00   |
|     | 15. Warrant 82, Seaboard Air Line Ry., 1,000 Mileage for B. Harris, Inspector .....  | 20 00  |
|     | 17. Warrant 83, The State Co., Printing 1,200 Extra Copies 12th Annual Report for 1915, 17 Copper Cuts and Grouping, bill attached ..... | 477 50 |
|     | 17. Warrant 84, Gulf and Atlantic Insurance Co., Premium on Bond of Commissioner Watson for 1916, bill attached .....                    | 80 00  |
|     | 17. Warrant 85, Gulf and Atlantic Ins. Co., Premium on Bond of B. Harris, Inspector, bill attached .....                                 | 12 50  |
|     | 18. Warrant 86, W. P. Blackwell, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
|     | 18. Warrant 87, Consolidated Auto Co., Parts and Repairs to Auto, bill attached .....  | 12 00  |
|     | 18. Warrant 88, Summersett & Dial, Insurance Premium on Laboratory Instruments, bill attached .....                                      | 4 00   |

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|      | 18. Warrant 89, Habenicht-McDougal Co., Auto Parts and Repairs, bill attached.....                                 | 4 05   |
|      | 29. Warrant 90, Southern Ry. Co., 1,000 Mileage for D. L. Smith, Inspector.....                                    | 20 00  |
|      | 29. Warrant 91, D. L. Smith, Traveling Expense, statement attached.....  | 40 00  |
|      | 21. Warrant 92, S. M. Sloan, Inspector, Salary for March.....  | 141 66 |
|      | 21. Warrant 93, J. R. Jones, Inspector, Salary for March.....  | 120 83 |
|      | 21. Warrant 94, B. Harris, Inspector, Salary for March.....  | 100 00 |
|      | 21. Warrant 95, W. P. Blackwell, Inspector, Salary for March.....  | 100 00 |
|      | 21. Warrant 96, Jas. Land, Jr., Inspector, Salary for March.....   | 100 00 |
|      | 21. Warrant 97, R. M. Simpson, Assistant Chemist, Salary for March.....  | 108 33 |
|      | 21. Warrant 98, D. L. Smith, Inspector, Salary March 15-31st.....  | 50 00  |
|      | 21. Warrant 99, C. L. Adams, Assistant Chemist, Salary for March.....  | 85 00  |
|      | 21. Warrant 100, T. T. Huffman, Inspector, Salary for March.....   | 80 00  |
|      | 21. Warrant 101, W. S. Bonner, Factory Inspector, Salary for March.....  | 100 00 |
| Apr. | 1. Warrant 102, Southern Ry. Co., 1,000 Mileage for W. P. Blackwell, Inspector.....                                | 20 00  |
|      | 8. Warrant 103, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....                            | 40 00  |
|      | 10. Warrant 104, Jas. D. Lee, Clerical Help, Freight on Seized Feed Stuff, etc., bill attached.....                | 2 67   |
|      | 10. Warrant 105, S. A. L. Ry. 1,000 Mileage for W. S. Bonner, Factory Inspector.....                               | 20 00  |
|      | 10. Warrant 106, T. T. Huffman, Inspector, Traveling Expenses Motor Car Travel.....                                | 40 00  |
|      | 13. Warrant 107, Ozark Feed Co., Neosho, Mo., Redemption of Tax Stamps Returned and Not Used (1,467 No. 100).....  | 18 34  |
|      | 13. Warrant 108, The Murray Drug Co., Supplies for Laboratory, bills attached.....                                 | 17 93  |
|      | 14. Warrant 109, Columbia Seal and Stamp Co., 25 Special File Boxes, bill attached.....                            | 26 46  |
|      | 18. Warrant 110, J. D. Dial, Renewal of Bond, W. S. Bonner, Factory Inspector, bill attached.....                  | 12 50  |
|      | 20. Warrant 111, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached.....                      | 40 00  |
|      | 22. Warrant 112, Jas. D. Lee, Clerical Help, Seized Feed Stuff, statement attached.....                            | 2 99   |
|      | 22. Warrant 113, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....                           | 40 00  |
|      | 26. Warrant 114, W. S. Bonner, Factory Inspector, Salary for April, dated 5/1.....                                 | 100 00 |
|      | 28. Warrant 115, B. Harris, Inspector, Traveling Expenses, statement (3/1-3/24).....                               | 53 88  |
|      | 29. Warrant 116, D. L. Smith, Inspector, Traveling Expenses, statement.....  | 40 00  |
|      | 30. Warrant 117, S. M. Sloan, Inspector, Salary for April.....   | 141 66 |
|      | 30. Warrant 118, J. R. Jones, Inspector, Salary for April.....   | 120 83 |
|      | 30. Warrant 119, B. Harris, Inspector, Salary for April.....   | 100 00 |
|      | 30. Warrant 120, W. P. Blackwell, Inspector, Salary for April.....   | 100 00 |
|      | 30. Warrant 121, Jas. Land, Jr., Inspector, Salary for April.....  | 100 00 |
|      | 30. Warrant 122, R. M. Simpson, Assistant Chemist, Salary for April.....   | 108 33 |
|      | 30. Warrant 123, D. L. Smith, Inspector, Salary for April.....   | 100 00 |
|      | 30. Warrant 124, C. L. Adams, Assistant Chemist, Salary for April.....   | 85 00  |
|      | 30. Warrant 125, T. T. Huffman, Inspector, Salary for April.....   | 80 00  |
| May  | 2. Warrant 126, Nathan Burkett, Carpenter, Services three Days Repairing Office Furniture, statement attached..... | 6 00   |

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| 2. Warrant 127, E. J. Watson, Commissioner, Traveling Expenses, statement attached.                              | 28 03  |
| 2. Warrant 128, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Sloan.....                                    | 20 00  |
| 4. Warrant 129, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached.....                     | 40 00  |
| 6. Warrant 130, J. Wilson Gibbes, 2 Boxes Purple Tw. Carbon, statement attached.....                             | 2 75   |
| 6. Warrant 131, D. L. Smith, Inspector, Traveling Expenses, statement attached.....                              | 40 00  |
| 6. Warrant 132, A. C. Summers, Chemist, Operating Expenses of Laboratory for April, statement attached.....      | 28 95  |
| 10. Warrant 133, C. M. Tew, Auditor, Lights and Gas for April, statement attached.                               | 15 90  |
| 10. Warrant 134, Southern Bell Telephone Co., Telephone Service for April, statement attached.....               | 13 15  |
| 10. Warrant 135, Gibbes Machinery Co., Parts for Auto, statement attached.....                                   | 9 90   |
| 10. Warrant 136, Central Drug Co., Inc., Supplies for Laboratory, statement attached.....                        | 1 95   |
| 10. Warrant 137, Capital City Laundry, Towel Service, January-March, statement attached.....                     | 3 00   |
| 10. Warrant 138, R. L. Bryan Co., Printing Books and Blanks, attached bills.....                                 | 43 50  |
| 10. Warrant 139, Southern Ry. Co., 1,000 Mileage for W. P. Blackwell, Inspector.....                             | 20 00  |
| 11. Warrant 140, T. T. Huffman, Inspector, Expense Motor Car Travel and Repairs, statement attached.....         | 40 00  |
| 12. Warrant 140, Jas. D. Lee, Clerical Help, Freight on Seized Feed Stuffs, statement attached.....              | 6 23   |
| 13. Warrant 141, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.                             | 40 00  |
| 13. Warrant 142, C. M. Scott, U. T. A., 1,000 Mileage for D. L. Smith, Inspector, statement attached.....        | 20 00  |
| 15. Warrant 143, Southern Ry. Co., 1,000 Mileage for J. Roy Jones, Inspector, statement attached.....            | 20 00  |
| 17. Warrant 144, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached.....                    | 40 00  |
| 19. Warrant 145, S. M. Sloan, Inspector, Traveling Expenses, statement attached.....                             | 40 00  |
| 19. Warrant 146, S. A. L. Ry., 1,000 Mileage for W. S. Bonner, Factory Inspector....                             | 20 00  |
| 20. Warrant 147, J. Roy Jones, Inspector, Traveling Expenses, statement attached.                                | 40 00  |
| 20. Warrant 148, D. L. Smith, Inspector, Traveling Expenses, statement attached.....                             | 40 00  |
| 22. Warrant 149, C. M. Scott, U. T. A., Mileage for S. M. Sloan, Inspector.....                                  | 20 00  |
| 22. Warrant 150, W. S. Bonner, Factory Inspector, Salary, May, dated May 31.....                                 | 100 00 |
| 22. Warrant 151, W. H. Coleman, P. M., 5,000 No. 8, 1c. White Stamped Envelopes, statement attached.....         | 57 80  |
| 25. Warrant 152, S. Ashby, Manager, Fairwold Farm, 1 Hog for Experimental Feed purposes, statement attached..... | 3 50   |
| 31. Warrant 153, S. M. Sloan, Inspector, Salary for May.....   | 141 66 |
| 31. Warrant 154, J. R. Jones, Inspector, Salary for May.....   | 120 83 |
| 31. Warrant 155, B. Harris, Inspector, Salary for May.....   | 100 00 |
| 31. Warrant 156, W. P. Blackwell, Inspector, Salary for May.....   | 100 00 |
| 31. Warrant 157, Jas. Land, Jr., Inspector, Salary for May.....  | 100 00 |
| 31. Warrant 158, D. L. Smith, Inspector, Salary for May.....   | 100 00 |
| 31. Warrant 159, T. T. Huffman, Inspector, Salary for May.....   | 80 00  |
| 31. Warrant 160, R. M. Simpson, Assistant Chemist, Salary for May.....   | 115 00 |



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| 31. Warrant 161, C. L. Adams, Assistant Chemist, Salary for May.....  | 85 00  |
| June 1. Warrant 162, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached.....                                 | 40 00  |
| 3. Warrant 163, S. A. L. Ry., 1,000 Mileage for Inspector Blackwell.....  | 20 00  |
| 3. Warrant 164, Southern Ry. Co., 1,000 Mileage for D. L. Smith, Inspector.....   | 20 00  |
| 3. Warrant 165, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 7. Warrant 166, T. T. Huffman, Inspector, Traveling Expenses (Motor Car), statement attached.....                                 | 40 00  |
| 7. Warrant 167, Columbia Seal and Stamp Co., Office Supplies, statement attached.....   | 29 05  |
| 12. Warrant 168, Brown & Pope, Freight and Drayage Seized Feed Stuffs and Feed Hooks.....   | 19 03  |
| 14. Warrant 169, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached.....                                     | 40 00  |
| 16. Warrant 170, J. Roy Jones, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 16. Warrant 171, C. M. Scott, U. T. A., 1,000 Mileage for W. S. Bonner, Factory Inspector.....                                    | 20 00  |
| 17. Warrant 172, D. L. Smith, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
| 17. Warrant 173, B. Harris, Inspector, Traveling Expenses, statement attached.....  | 36 60  |
| 17. Warrant 174, C. M. Scott, U. T. A., 1,000 Mileage for B. Harris, Inspector.....   | 20 00  |
| 17. Warrant 175, Soil Science, Dr. Jacob G. Lipman, Editor, Subs. to "Soil Science," 1 Year in Advance.....                       | 3 00   |
| 20. Warrant 176, The Texas Co., May Account, Supplies for Auto, statement attached.....   | 33 32  |
| 20. Warrant 177, T. T. Huffman, Inspector, Expenses Motor Car Travel, statement attached.....                                     | 40 00  |
| 22. Warrant 178, Seaboard Air Line Ry., 1,000 Mileage for D. L. Smith, Inspector.....   | 20 00  |
| 23. Warrant 179, Southern Express Co., C. O. D. and Charges, Auto Parts, statement attached.....                                  | 12 58  |
| 24. Warrant 180, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
| 24. Warrant 181, W. H. Coleman, P. M., C. O. D. and Charges, Auto Parts, statement attached.....                                  | 2 91   |
| 24. Warrant 182, W. S. Bonner, Factory Inspector, Salary for June, Dated June 1st....   | 100 00 |
| 26. Warrant 183, W. H. Coleman, P. M., 5,000 1c. White Stamped Envelopes, No. 8 and 1,000 2c. Stamps.....                         | 77 80  |
| 27. Warrant 184, J. H. Branch & Co., Portsmouth, Va., Redemption of 206 No. 100 S. C. Tax Stamps at 1¼c., statement attached..... | 2 58   |
| 29. Warrant 185, S. B. Hyatt, Automobile Storage and Service, March 6 to May 31, statement attached.....                          | 19 00  |
| 29. Warrant 186, T. T. Huffman, Inspector, Salary June (6-30).....  | 85 00  |
| 29. Warrant 187, Atlanta Paper Co., Atlanta, Ga., 6,250 Blue Lined Feed Stuff Sample Envelopes at \$9.25, bill attached.....      | 57 80  |
| 30. Warrant 188, S. M. Sloan, Inspector, Salary, June.....  | 141 66 |
| 30. Warrant 189, J. R. Jones, Inspector, Salary, June.....  | 120 83 |
| 30. Warrant 190, B. Harris, Inspector, Salary, June.....  | 100 00 |
| 30. Warrant 191, W. P. Blackwell, Inspector, Salary, June.....  | 100 00 |
| 30. Warrant 192, Jas. Land, Jr., Inspector Salary, June.....  | 100 00 |
| 30. Warrant 193, D. L. Smith, Inspector, Salary, June.....  | 100 00 |
| 30. Warrant 194, R. M. Simpson, Assistant Chemist, Salary, June.....  | 115 00 |

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|      | 30. Warrant 195, C. L. Adams, Assistant Chemist, Salary, June.....  | 85 00  |
| July | 1. Warrant 196, Seaboard Air Line Ry., 1,000 Mileage for W. P. Blackwell, Inspector..   | 20 00  |
|      | 1. Warrant 197, A. C. Summers, Chemist, Operating Expenses of Laboratory for June, statement attached .....                             | 27 50  |
|      | 1. Warrant 198, D. L. Smith, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
|      | 6. Warrant 199, The State Co., Printing 500,000 Tax Stamps, statement attached.....   | 75 00  |
|      | 6. Warrant 200, Southern Ry. Co., 1,000 Mileage for B. Harris, Inspector.....   | 20 00  |
|      | 6. Warrant 201, B. Harris, Inspector, Traveling Expenses, statement attached.....   | 64 50  |
|      | 7. Warrant 202, W. S. Bonner, Factory Inspector, Expenses, statement attached.....  | 40 00  |
|      | 7. Warrant 203, The Fisk Rubber Co., Supplies for Automobile, statement attached .....  | 49 58  |
|      | 7. Warrant 204, C. M. Tew, Auditor, Lights and Gas for June, statement attached..   | 14 43  |
|      | 7. Warrant 205, Columbia Ice and Fuel Co., Ice Coupons, statement attached.....   | 5 00   |
|      | 8. Warrant 206, Habenicht-McDougal Co., Supplies and Repairs for Auto, statement attached .....   | 8 35   |
|      | 8. Warrant 207, Consolidated Auto Co., Supplies for Auto, bills attached.....   | 6 80   |
|      | 8. Warrant 208, Henderson Hardware Co. (account to 5/1/16), Supplies, bills attached .....  | 4 60   |
|      | 10. Warrant 209, Sloan's Sporting Goods Co., 30 Steel Rods for Laboratory.....  | 3 00   |
|      | 10. Warrant 210, Elmer & Amand, New York City, One Enterprise Grinding Mill No. 3, for Laboratory, bill attached.....                   | 7 48   |
|      | 10. Warrant 211, Underwood Typewriter Co., Rent for Underwood No. 5-513656, May 24 to July 24, at \$3.00 per Month, bill attached ..... | 6 00   |
|      | 10. Warrant 213, Peoples Oil Co., Supplies for Auto, bill attached.....   | 5 04   |
|      | 12. Warrant 214, Arthur H. Thomas Co., West Washington Square, Philadelphia, Pa., Laboratory Supplies, statement attached .....         | 160 50 |
|      | 12. Warrant 215, The Murray Drug Co., Laboratory Supplies, statement attached.....  | 21 03  |
|      | 13. Warrant 216, T. T. Huffman, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
|      | 15. Warrant 217, Southern Express Co., C. O. D. and Charges, Auto Parts from Mitchell-Lewis Motor Co., statement attached....           | 10 37  |
|      | 17. Warrant 218, R. M. Mazyck, Freight on Shipments of Highway Posting Material, statement attached .....                               | 8 46   |
|      | 17. Warrant 219, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|      | 17. Warrant 220, S. A. L. Ry. Co., 1,000 Mileage for W. S. Bonner, Factory Inspector....  | 20 00  |
|      | 18. Warrant 221, W. H. Coleman, P. M., Postage Stamps, Mailing Bulletins, Maps, etc....   | 50 00  |
|      | 19. Warrant 222, Southern Ry. Co., 1,000 Mileage for D. L. Smith, Inspector.....  | 20 00  |
|      | 22. Warrant 223, S. A. L. Ry. Co., 1,000 Mileage for W. P. Blackwell, Inspector.....  | 20 00  |
|      | 22. Warrant 224, J. Roy Jones, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
|      | 24. Warrant 225, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....  | 40 00  |
|      | 26. Warrant 226, Columbia Seal and Stamp Co., Office Supplies, statement attached.....  | 12 80  |
|      | 27. Warrant 227, Southern Ry. Co., 1,000 Mileage for Inspector Harris.....  | 20 00  |
|      | 29. Warrant 228, D. L. Smith, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|      | 29. Warrant 229, Brown & Pope, Freight and Drayage Feed Stuff, statement attached.....  | 12 40  |
|      | 31. Warrant 230, W. S. Bonner, Factory Inspector, Salary, July.....   | 100 00 |
|      | 31. Warrant 231, S. M. Sloan, Inspector, Salary, July .....   | 141 66 |

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|       | 31. Warrant 232, J. R. Jones, Inspector, Salary, July .....  | 120 83 |
|       | 31. Warrant 233, B. Harris, Inspector, Salary, July .....  | 100 00 |
|       | 31. Warrant 234, W. P. Blackwell, Inspector, Salary, July .....  | 100 00 |
|       | 31. Warrant 235, Jas. Land, Jr., Inspector, Salary, July .....   | 100 00 |
|       | 31. Warrant 236, D. L. Smith, Inspector, Salary, July .....  | 100 00 |
|       | 31. Warrant 237, T. T. Huffman, Inspector, Salary, July .....  | 85 00  |
|       | 31. Warrant 238, R. M. Simpson, Assistant Chemist, Salary, July .....                                  | 115 00 |
|       | 31. Warrant 239, C. L. Adams, Assistant Chemist, Salary, July .....                                    | 85 00  |
| Aug.  | 1. Warrant 240, The State Co., Printing and Office Supplies, statement attached .....                  | 35 95  |
|       | 3. Warrant 241, C. M. Tew, Auditor, Gas and Lights for July, statement attached .....                  | 15 31  |
|       | 3. Warrant 242, Southern Bell Telephone and Telegraph Co., Telephone Service, statement attached ..... | 16 25  |
|       | 3. Warrant 243, B. Harris, Inspector, Traveling Expenses, statement attached .....                     | 65 60  |
|       | 3. Warrant 244, Cave Vulcanizing Works, Supplies for Auto, statement attached .....                    | 19 94  |
|       | 3. Warrant 245, S. B. Hyatt, Auto Storage and Service, June and July .....                             | 14 70  |
|       | 5. Warrant 246, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....          | 40 00  |
|       | 5. Warrant 247, W. P. Blackwell, Inspector, Traveling Expenses, statement attached .....               | 40 00  |
|       | 8. Warrant 248, Southern Ry. Co., 1,000 Mileage for D. L. Smith, Inspector .....                       | 20 00  |
|       | 9. Warrant 249, S. A. L. Ry., 1,000 Mileage for W. S. Bonner, Factory Inspector .....                  | 20 00  |
|       | 12. Warrant 250, C. M. Scott, U. T. A., 1,000 Mileage for W. P. Blackwell, Inspector .....             | 20 00  |
|       | 16. Warrant 251, Brown & Pope, Freight and Drayage Seized Feed Stuffs, statement attached .....        | 3 64   |
|       | 16. Warrant 252, Southern Express Co., C. O. D. and Charges, Auto Parts, statement attached .....      | 38 97  |
|       | 19. Warrant 253, W. P. Blackwell, Inspector, Traveling Expenses, statement attached .....              | 40 00  |
|       | 21. Warrant 254, Southern Ry. Co., 1,000 Mileage for Inspector Harris .....                            | 20 00  |
|       | 23. Warrant 255, W. S. Bonner, Factory Inspector, Salary for August (8/31) .....                       | 170 00 |
|       | 28. Warrant 256, S. M. Sloan, Inspector, Traveling Expenses, statement attached .....                  | 40 00  |
|       | 29. Warrant 257, J. R. Jones, Inspector, Traveling Expenses, statement attached .....                  | 40 00  |
|       | 31. Warrant 258, S. M. Sloan, Inspector, Salary, August .....  | 141 66 |
|       | 31. Warrant 259, J. R. Jones, Inspector, Salary, August .....  | 120 83 |
|       | 31. Warrant 260, B. Harris, Inspector, Salary, August .....  | 100 00 |
|       | 31. Warrant 261, W. P. Blackwell, Inspector, Salary, August .....                                      | 100 00 |
|       | 31. Warrant 262, Jas. Land, Jr., Inspector, Salary, August .....                                       | 100 00 |
|       | 31. Warrant 263, D. L. Smith, Inspector, Salary, August .....  | 100 00 |
|       | 31. Warrant 264, T. T. Huffman, Inspector, Salary, August .....  | 85 00  |
|       | 31. Warrant 265, R. M. Simpson, Assistant Chemist, Salary, August .....                                | 115 00 |
|       | 31. Warrant 266, C. L. Adams, Assistant Chemist, Salary, August .....                                  | 85 00  |
| Sept. | 2. Warrant 267, Columbia Seal and Stamp Co., Office Supplies, statement attached .....                 | 8 25   |
|       | 4. Warrant 268, Southern Ry. Co., 1,000 Mileage for D. L. Smith, Inspector .....                       | 20 00  |
|       | 5. Warrant 269, J. D. Dial, Premium on renewal Bond, T. T. Huffman, Inspector .....                    | 12 50  |
|       | 9. Warrant 270, S. A. L. Ry., 1,000 Mileage for W. P. Blackwell, Inspector .....                       | 20 00  |

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| 9. Warrant 271, B. Harris, Inspector, Traveling Expenses, statement attached.....  | 61 00  |
| 9. Warrant 272, C. M. Scott, U. T. A., 1,000 Mileage for B. Harris, Inspector.....   | 20 00  |
| 11. Warrant 273, The State Co., Printing Supplies, statement attached.....   | 64 83  |
| 9. Warrant 274, C. M. Tew, Auditor, Gas and Electricity for August, statement attached.....  | 12 54  |
| 11. Warrant 275, W. H. Coleman, P. M., Office Postage, statement attached.....   | 50 00  |
| 13. Warrant 276, H. W. McCreight, Clerk, Freight on Seized Feed Stuff, statement attached.....   | 18 36  |
| 14. Warrant 277, W. S. Bonner, Factory Inspector, Salary, September, dated Sept. 30..  | 100 00 |
| 14. Warrant 278, Gibbes Machinery Co., Supplies for Automobile, statement attached.....  | 18 50  |
| 14. Warrant 279, Columbia Paper Co., No. 100 Mattress Twine, statement attached.....   | 5 50   |
| 14. Warrant 280, Western Union Telegraph Co., Telegraph Service, statement attached.....   | 47 07  |
| 15. Warrant 281, W. B. Guilmarin & Co., Laboratory Supplies and Services, statement attached.....  | 7 75   |
| 15. Warrant 282, Cave Vulcanizing Works, Automobile Supplies and Services, statement attached.....   | 20 42  |
| 15. Warrant 283, Murray Drug Co., Supplies for Laboratory, statement attached.....   | 15 95  |
| 15. Warrant 284, Murray Drug Co., Supplies for Marking Highways, statement attached.....   | 53 25  |
| 16. Warrant 285, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 16. Warrant 286, Southern Bell Telephone and Telegraph Co., Telephone Service, statement attached.....   | 17 55  |
| 16. Warrant 287, Habenicht-McDougal Co., Supplies for Auto, statement attached.....  | 5 25   |
| 16. Warrant 288, W. H. Coleman, P. M., 5,000 No. 8 2c. Stamped Envelopes.....  | 110 00 |
| 16. Warrant 289, Columbia Welding Co., Auto Repairs, bills attached.....   | 10 50  |
| 16. Warrant 290, Underwood Typewriter Co., Charlotte, N. C., Rental of Underwood No. 5-541477, July 24-September 24, Repairing No. 5-578394..... | 7 00   |
| 23. Warrant 291, D. L. Smith, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 23. Warrant 292, D. L. Smith, Inspector, Traveling Expenses August 17-Sept. 22, statement attached.....  | 54 25  |
| 27. Warrant 293, Southern Ry. Co., 1,000 Mileage for W. S. Bonner, Factory Inspector.....  | 20 00  |
| 27. Warrant 294, S. A. L. Ry., 1,000 Mileage each for Inspectors Harris and Jones.....   | 40 00  |
| 29. Warrant 295, Automobile Transfer Co., Services September 7-8, statement attached.....  | 50 00  |
| 29. Warrant 296, The Charleston American, S. C., Subscription 1 Year, statement attached.....  | 6 00   |
| 29. Warrant 297, S. A. L. Ry., Freight on Seized Meal, 95 Sacks from Georgetown Grocery Co.....  | 11 40  |
| 29. Warrant 298, J. Roy Jones, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
| 29. Warrant 299, W. H. Coleman, P. M., P. O. Box Rent, Oct., Nov., Dec., 1916.....   | 2 00   |
| 30. Warrant 300, S. M. Sloan, Inspector, Salary, September.....  | 141 66 |
| 30. Warrant 301, J. R. Jones, Inspector, Salary, September.....  | 120 83 |
| 30. Warrant 302, B. Harris, Inspector, Salary, September.....  | 100 00 |
| 30. Warrant 303, W. P. Blackwell, Inspector, Salary, September.....  | 100 00 |
| 30. Warrant 304, Jas. Land, Jr., Inspector, Salary, September.....   | 100 00 |
| 30. Warrant 305, D. L. Smith, Inspector, Salary, September.....  | 100 00 |

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|      | 30. Warrant 306, T. T. Huffman, Inspector, Salary, September .....   | 85 00  |
|      | 30. Warrant 307, R. M. Simpson, Assistant Chemist, Salary, September.....                                      | 115 00 |
|      | 30. Warrant 308, C. L. Adams, Assistant Chemist, Salary, September.....  | 85 00  |
|      | 30. Warrant 309, Southern Ry. Co., 1,000 Mileage for Inspectors Blackwell and Smith.....                       | 40 00  |
| Oct. | 2. Warrant 310, C. M. Scott, U. T. A., 1,000 Mileage for S. M. Sloan, Inspector.....                           | 20 00  |
|      | 2. Warrant 311, A. C. Summers, Chemist, Expense of Operating Laboratory for September, statement attached..... | 28 65  |
|      | 2. Warrant 312, Nathan Burkett, Carpenter, Services 26 Days, Work on Exhibit, Auto, etc. ....                  | 59 75  |
|      | 3. Warrant 313, B. Harris, Inspector, Traveling Expenses, statement attached.....                              | 63 10  |
|      | 4. Warrant 314, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....                        | 15 33  |
|      | 7. Warrant 315, W. P. Blackwell, Inspector, Expenses, bill attached .....                                      | 40 00  |
|      | 30. Warrant 316, Jas. Land, Jr., Inspector, Salary for October .....   | 100 00 |
|      | 10. Warrant 317, Southern Bell Telephone and Telegraph Co., Telephone Service, statement attached .....        | 14 90  |
|      | 11. Warrant 318, Western Union Telegraph Co., Telephone Service, statement attached.....                       | 52 77  |
|      | 11. Warrant 319, Brown & Pope, Freight and Drayage on Seized Feed Stuffs and Tag Hooks .....                   | 14 11  |
|      | 11. Warrant 320, E. H. Titchener & Co., Birmingham, N. Y., 500,000 Feed Tag Hooks, statement attached .....    | 65 78  |
|      | 11. Warrant 321, The State Co., Printing and Supplies, statement attached.....                                 | 125 25 |
|      | 11. Warrant 322, Postal Telegraph Cable Co., Telegraph Service, statement attached.....                        | 2 64   |
|      | 11. Warrant 323, Capital City Laundry, Towel Service April-September .....                                     | 6 00   |
|      | 11. Warrant 324, Columbia Seal and Stamp Co., Office Supplies, statement attached.....                         | 15 70  |
|      | 11. Warrant 325, The News and Courier, Charleston, S. C., 45 Copies, 9/28, statement attached .....            | 2 25   |
|      | 11. Warrant 326, W. R. Hartin, Repairs to Auto, statement attached .....                                       | 5 50   |
|      | 11. Warrant 327, S. B. Hyatt, Storage of Auto Aug. and Sept., statement attached.....                          | 10 00  |
|      | 11. Warrant 328, Columbia Carbon Co., Dayton, Ohio, Two Boxes Carbon, statement attached .....                 | 6 00   |
|      | 11. Warrant 329, Columbia Paper Co., No. 5 Hemp Twine, No. 24, statement attached .....                        | 1 50   |
|      | 14. Warrant 330, D. L. Smith, Inspector, Traveling Expenses, statement attached.....                           | 43 05  |
|      | 31. Warrant 331, W. S. Bonner, Factory Inspector, Salary, October.....   | 100 00 |
|      | 20. Warrant 332, S. M. Sloan, Inspector, Traveling Expenses, statement attached.....                           | 40 00  |
|      | 20. Warrant 333, Southern Ry. Co., 1,000 Mileage for J. H. Woodward, Inspector.....                            | 20 00  |
|      | 21. Warrant 334, Southern Railway Co., 1,000 Mileage for W. P. Blackwell, Inspector.....                       | 20 00  |
|      | 21. Warrant 335, Southern Express Co., C. O. D. and Charges, Auto Parts, statement attached .....              | 22 06  |
|      | 25. Warrant 336, W. H. Coleman, P. M., C. O. D. Parts for Auto, statement attached.....                        | 9 41   |
|      | 25. Warrant 337, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....                       | 40 00  |
|      | 28. Warrant 338, S. A. L. Ry., 1,000 Mileage for D. L. Smith, Inspector.....                                   | 20 00  |
|      | 30. Warrant 339, National Map Co., 1 Copy U. S. World Map for Office, statement attached .....                 | 1 95   |
|      | 31. Warrant 340, S. M. Sloan, Inspector, Salary, October .....   | 141 66 |
|      | 31. Warrant 341, J. R. Jones, Inspector, Salary, October .....   | 120 83 |

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| 31. Warrant 342, B. Harris, Inspector, Salary, October .....  | 100 00 |
| 31. Warrant 343, W. P. Blackwell, Inspector, Salary, October .....  | 100 00 |
| 31. Warrant 344, D. L. Smith, Inspector, Salary, October .....  | 100 00 |
| 31. Warrant 345, T. T. Huffman, Inspector, Salary, October .....  | 85 00  |
| 31. Warrant 346, R. M. Simpson, Assistant Chemist, Salary, October .....  | 115 00 |
| 31. Warrant 347, C. L. Adams, Assistant Chemist, Salary, October .....  | 85 00  |
| 31. Warrant 348, J. R. Jones, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| Nov. 2. Warrant 349, Jas. Land, Inspector, Salary, November .....   | 100 00 |
| 4. Warrant 350, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 4. Warrant 351, D. L. Smith, Inspector, Traveling Expenses, statement attached .....  | 40 00  |
| 4. Warrant 352, R. M. Simpson, Assistant Chemist, Expenses, statement attached .....  | 3 55   |
| 4. Warrant 353, B. Harris, Inspector, Traveling Expenses, statement attached .....  | 49 95  |
| 8. Warrant 354, T. T. Huffman, Inspector, Traveling Expenses, statement attached .....  | 40 00  |
| 9. Warrant 355, C. M. Tew, Auditor, Gas and Electricity, statement attached .....   | 19 58  |
| 9. Warrant 356, Southern Bell Telephone Co., Telephone Service, statement attached ..   | 26 34  |
| 9. Warrant 357, H. H. Beard, Assistant Chemist, Traveling Expenses .....  | 11 15  |
| 9. Warrant 358, Dalton Adding Machine Co., Repairing Machine, statement attached ..   | 5 00   |
| 9. Warrant 359, The Murray Drug Company, Laboratory Supplies, statement attached ..   | 14 75  |
| 10. Warrant 360, The State Co., Printing Tax Stamps, Office Supplies, etc., statement attached .....  | 153 65 |
| 13. Warrant 361, Arthur H. Thomas Co., West Washington Square, Philadelphia, Pa., Laboratory Supplies, statement attached ..                  | 226 98 |
| 13. Warrant 362, Terven-Childs Electric Co., Supplies for Laboratory, statement attached .....  | 13 25  |
| 13. Warrant 363, S. A. L., 1,000 Mileage for Inspector Harris .....   | 20 00  |
| 13. Warrant 364, Underwood Typewriter Co., Charlotte, N. C., Rental No. 5/617977, September 24 to November 24, 1916, statement attached ..... | 6 00   |
| 17. Warrant 365, Southern Ry. Co., 1,000 Mileage for Inspector Blackwell .....  | 20 00  |
| 17. Warrant 366, W. P. Blackwell, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 18. Warrant 367, T. T. Huffman, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 18. Warrant 368, D. L. Smith, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 20. Warrant 369, Blish Milling Co., Seymour, Ind., Redemption of Tax Stamps .....   | 7 45   |
| 20. Warrant 370, Southern Good Roads Publishing Co., Lexington, N. C., Subscription, October, 1916-October, 1917, statement attached .....    | 1 00   |
| 20. Warrant 371, Record Publishing Co., Subscriptions, September 4, 1916-1917, statement attached .....                                       | 6 00   |
| 20. Warrant 372, C. O. Brown & Bro., Supplies for Marking Highways and Exhibits, statement attached .....                                     | 14 05  |
| 20. Warrant 373, Columbia Sign Works, Printing Two Banners, Good Roads, statement attached .....  | 4 00   |
| 20. Warrant 374, Columbia Welding Co., Repairing Automobile, statement attached ..  | 10 00  |
| 22. Warrant 375, E. J. Watson, Commissioner, Traveling Expenses, statement attached ..  | 17 65  |
| 25. Warrant 376, S. A. L. Ry., 1,000 Mileage for D. L. Smith, Inspector, statement attached .....   | 20 00  |

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| 30. Warrant 377, W. S. Bonner, Factory Inspector, Salary, November.....   | 100 00 |
| 30. Warrant 378, S. M. Sloan, Inspector, Salary November .....  | 141 66 |
| 30. Warrant 379, J. R. Jones, Inspector, Salary, November .....   | 120 83 |
| 30. Warrant 380, B. Harris, Inspector, Salary November .....  | 100 00 |
| 30. Warrant 381, W. P. Blackwell, Inspector, Salary, November .....   | 100 00 |
| (Warrant 382 void.)   |        |
| 30. Warrant 383, D. L. Smith, Inspector, Salary, November .....   | 100 00 |
| 30. Warrant 384, T. T. Huffman, Inspector, Salary, November .....   | 85 00  |
| 30. Warrant 385, R. M. Simpson, Assistant Chemist, Salary, November.....  | 115 00 |
| 30. Warrant 386, C. L. Adams, Assistant Chemist, Salary, November.....  | 85 00  |
| Dec. 1. Warrant 387, The State Co., Printing Tax Stamps and Office Supplies, statement attached .....               | 261 09 |
| 1. Warrant 388, The State Co., Adv. Notice to Manufacturers, Labor Reports, statement attached .....                | 5 62   |
| 5. Warrant 389, Southern Express Co., C. O. D. and Charges, Supplies for Auto, statement attached .....             | 87 54  |
| 6. Warrant 390, Southern Express Co., C. O. D. Charges, Supplies for Auto, statement attached .....                 | 6 77   |
| 6. Warrant 391, Southern Ry. Co., 1,000 Mileage for Inspector Blackwell, statement attached .....                   | 20 00  |
| 8. Warrant 392, A. C. Summers, Chemist, Expense of Operating Laboratory for November, statement attached.....       | 31 35  |
| 8. Warrant 393, B. Harris, Inspector, Traveling Expenses, statement attached.....                                   | 68 25  |
| 8. Warrant 394, Southern Bell Tel. Co., Telephone Service, statement attached.....                                  | 21 85  |
| 9. Warrant 395, W. P. Blackwell, Inspector, Traveling Expenses, statement attached.....                             | 40 00  |
| 14. Warrant 396, Habenicht-McDougal Co., Supplies for Auto, statement attached.....                                 | 3 15   |
| 14. Warrant 397, C. M. Tew, Auditor, Gas for November .....   | 9 72   |
| 14. Warrant 398, Perry-Mann Electric Co., Supplies for Auto, statement attached.....                                | 10 27  |
| 14. Warrant 399, R. L. Bryan Co., Printing Receipt Books, statement attached.....                                   | 14 35  |
| 14. Warrant 400, Consolidated Auto Co., Supplies for Automobile, statement attached .....                           | 8 00   |
| 14. Warrant 401, Columbia Paper Co., No. 10 Hemp Twine, No. 18, statement attached.....                             | 3 50   |
| 14. Warrant 402, J. L. Mimnaugh & Co., Supplies for Exhibit and Office, statement attached .....                    | 27 89  |
| 14. Warrant 403, Henry Romeike, Inc., 106-110 7th Ave., New York City, Services to Dec. 1, statement attached.....  | 1 30   |
| 14. Warrant 404, The Greenville News Co., Greenville, S. C., Adv. Notice to Manufacturers, statement attached ..... | 4 25   |
| 14. Warrant 405, The Pee Dee Advocate, Bennettsville, S. C., Adv. Notice to Manufacturers, statement attached ..... | 2 10   |
| 14. Warrant 406, Anderson Intelligencer, Anderson, S. C., Adv. Notice to Manufacturers, statement attached .....    | 3 80   |
| 14. Warrant 407, Southern Express Co., C. O. D. and Charges, Supplies for Automobile, statement attached .....      | 15 69  |
| 16. Warrant 408, D. L. Smith, Inspector, Traveling Expense, statement attached.....                                 | 40 00  |
| 16. Warrant 409, D. L. Smith, Inspector (advance), statement attached.....  | 40 00  |
| 16. Warrant 410, S. A. L. Ry., 1,000 Mileage for Inspectors Smith and Woodward.....                                 | 40 00  |
| 21. Warrant 411, Bailey Distributing Co., Redemption of Tax Stamps, statement attached .....                        | 51 28  |

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| 21. Warrant 412, Buckeye Cotton Oil Co., Macon, Ga., Redemption of Tax Stamps, statement attached .....  | 25 00             |             |
| 21. Warrant 413, Columbia Seal and Stamp Co., Office Supplies, statement attached.....   | 13 10             |             |
| 21. Warrant 414, The Spartanburg Herald, Spartanburg, S. C., Adv. Notice to Manufacturers, statement attached .....  | 5 50              |             |
| 23. Warrant 415, S. M. Sloan, Inspector, salary, December .....  | 141 66            |             |
| 23. Warrant 416, J. R. Jones, Inspector, Salary, December .....  | 120 83            |             |
| 23. Warrant 417, B. Harris, Inspector, Salary, December .....  | 100 00            |             |
| 23. Warrant 418, W. P. Blackwell, Inspector, Salary, December .....  | 100 00            |             |
| 23. Warrant 419, Jas. Land, Jr., Inspector, Salary, December .....   | 100 00            |             |
| 23. Warrant 420, D. L. Smith, Inspector, Salary, December .....  | 100 00            |             |
| 23. Warrant 421, R. M. Simpson, Assistant Chemist, Salary, December.....   | 115 00            |             |
| 23. Warrant 422, C. L. Adams, Assistant Chemist, Salary, December .....  | 90 00             |             |
| 23. Warrant 423, W. S. Bonner, Factory Inspector, Salary, December .....   | 100 00            |             |
| 23. Warrant 424, J. H. Woodward, Inspector, Salary, December .....   | 100 00            |             |
| 23. Warrant 425, T. T. Huffman, Inspector, Salary, December .....  | 85 00             |             |
| 29. Warrant 426, Southern Express Co., C. O. D. Express, Parts for Automobile, statement attached .....  | 34 50             |             |
| 29. Warrant 427, Arthur H. Thomas Co., West Washington Square, Philadelphia, Pa., Laboratory Supplies, statement attached .....                              | 148 23            |             |
| 29. Warrant 428, Caughman's Transfer Co., Service for State Exhibit.....   | 11 00             |             |
| 29. Warrant 429, The Murray Drug Co., Laboratory Supplies, statement attached.....   | 16 66             |             |
| 30. Warrant 430, Hon. S. T. Carter, State Treasurer, for Conversion Into the General Fund of the State as Per Sec. 16, Appropriation Act of 1916.....        | 4,000 00          |             |
| 30. Warrant 431, S. A. L. Ry., 2,000 Mileage for Commissioner Watson, H. W. McCreight, Clerk, and Inspectors S. M. Sloan, S. C. Groeschel, W. S. Bonner..... | 40 00             |             |
| 30. Warrant 432, E. C. Bridgman, 86 Warren St., New York City, Printing 3,000 Road Maps of S. C. from Plates.....  | 190 00            |             |
| 30. Warrant 433, A. C. Summers, Chemist, Operating Expenses of Laboratory for December, statement attached.....  | 26 70             |             |
|  | \$26,293 28       |             |
| Balance on deposit with State Treasurer.....   | 2,846 05          |             |
|  | <hr/> \$29,139 33 | \$29,139 33 |

### APPENDIX III.

#### DETAILED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF FUND DERIVED FROM TAX ON OIL, 1916.

##### RECEIPTS.

|  |            |             |
|--|------------|-------------|
| Balance on Deposit With State Treasurer, Jan. 1, 1916..... |            | \$2,079 99  |
| Feb. 1, by Deposit With State Treasurer .....              | \$2,248 81 |             |
| Mar. 1, by Deposit With State Treasurer .....              | 1,360 77   |             |
| Apr. 1, by Deposit With State Treasurer .....              | 2,521 19   |             |
| May 1, by Deposit With State Treasurer .....               | 1,696 53   |             |
| June 1, by Deposit With State Treasurer .....              | 2,295 77   |             |
| July 1, by Deposit With State Treasurer .....              | 1,423 50   |             |
| Aug. 1, by Deposit With State Treasurer .....              | 1,242 40   |             |
| Sept. 1, by Deposit With State Treasurer .....             | 2,587 69   |             |
| Oct. 1, by Deposit With State Treasurer .....              | 2,807 02   |             |
| Nov. 1, by Deposit With State Treasurer .....              | 1,658 66   |             |
| Dec. 1, by Deposit With State Treasurer .....              | 2,697 62   |             |
| Dec. 30, by Deposit With State Treasurer .....             | 2,807 40   |             |
|  | <hr/>      | 25,347 36   |
|  |            | \$27,427 36 |



## DISBURSEMENTS.

|      |     |   |          |
|------|-----|---|----------|
| Jan. | 8.  | Warrant 1, Geo. H. Huggins, P. M., 4,000 No. 6, 3,000 No. 8 Stamped Envelopes....   | \$150 96 |
|      | 8.  | Warrant 2, J. P. Selby, Inspector, Traveling Expenses, statement attached.....  | 63 95    |
|      | 8.  | Warrant 3, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....   | 40 00    |
|      | 10. | Warrant 4, J. D. Dial, Premium on Bond for 1916, of J. P. Selby, Inspector, statement attached.....   | 12 50    |
|      | 10. | Warrant 5, Standard Oil Co., Charlotte, N. C., Refund of Tax on Oil Shipped from Charleston to Points Out of State, statement attached..... | 42 80    |
|      | 11. | Warrant 6, S. A. L. Ry., 1,000 Mileage for J. Roy Jones, Inspector.....   | 20 00    |
|      | 13. | Warrant 7, Southern Ry. Co., 1,000 Mileage for O. H. Bissell, Inspector.....  | 20 00    |
|      | 14. | Warrant 8, J. Roy Jones, Inspector, Traveling Expenses, statement attached.....   | 40 00    |
|      | 14. | Warrant 9, The State Co., Printing Oil Blanks and Supplies, bill attached.....  | 8 35     |
|      | 15. | Warrant 10, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....   | 20 00    |
|      | 17. | Warrant 11, Geo. H. Huggins, P. M., 2,000 1c. Stamped Envelopes, 100 10c. Stamps, 200 5c. Stamps.....                                       | 43 12    |
|      | 19. | Warrant 12, Western Union Tel. Co., Telegraph Service for December, bill attached.....  | 34 87    |
|      | 22. | Warrant 13, Columbia Seal and Stamp Co., Stationery and Office Supplies.....  | 12 75    |
|      | 22. | Warrant 14, Southern Express Co., C. O. D. Parts for Automobile.....  | 9 98     |
|      | 25. | Warrant 15, Southern Ry. Co., 1,000 Mileage for H. W. McCreight, Chief Clerk.....   | 20 00    |
|      | 25. | Warrant 16, A. C. Summers, Chemist, Laboratory Expenses for December, statement attached.....   | 21 35    |
|      | 26. | Warrant 17, O. H. Bissell, Jr., Traveling Expenses, statement attached.....   | 40 00    |
|      | 28. | Warrant 18, University of S. C., Gas and Coal for Laboratory, statement attached.....   | 70 06    |
|      | 28. | Warrant 19, Summer Bro. Co., Newberry, S. C., Redemption of Oil Tax Stamps Returned Not used.....   | 4 05     |
|      | 28. | Warrant 20, J. W. Rhea, Assistant Chemist, Salary for January, Dated January 31..   | 100 00   |
|      | 29. | Warrant 21, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....   | 20 00    |
|      | 31. | Warrant 22, Geo. H. Huggins, P. M., 2,000 1c. Stamped Envelopes, No. 8.....   | 23 12    |
| Feb. | 1.  | Warrant 23, A. C. Summers, Chemist, Salary, January.....  | 137 50   |
|      | 1.  | Warrant 24, A. C. Doyle, Assistant Chemist, Salary, January.....  | 108 33   |
|      | 1.  | Warrant 25, O. H. Bissell, Jr., Inspector, Salary, January.....   | 100 00   |
|      | 1.  | Warrant 26, J. P. Selby, Inspector, Salary, January.....  | 100 00   |
|      | 1.  | Warrant 27, Miss S. J. Cunningham, Stenographer, Salary, January.....   | 70 00    |
|      | 1.  | Warrant 28, J. D. Lee, Clerical Help, Salary, January.....  | 60 00    |
|      | 4.  | Warrant 29, J. Roy Jones, Inspector, Traveling Expenses, statement attached.....  | 40 00    |
|      | 5.  | Warrant 30, J. P. Selby, Inspector, Traveling Expenses, statement attached.....   | 66 10    |
|      | 5.  | Warrant 31, A. C. Summers, Chemist, Operating Expenses of Laboratory for January.....   | 22 30    |
|      | 5.  | Warrant 32, The State Co., Printing Tax Stamps and Office Supplies, bill attached.....  | 44 35    |
|      | 5.  | Warrant 33, Ben Wallace, Porter, Services for January.....  | 30 00    |
|      | 7.  | Warrant 34, Geo. H. Huggins, P. M., Postage Stamps.....   | 40 00    |
|      | 8.  | Warrant 35, Robert Lee Cave, Parts and Repairs for Auto, bill attached.....   | 12 40    |

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| 11. Warrant 36, Southern Ry. Co., 2,000 Mileage for Commissioner Watson and Inspectors Sloan, Groeschel, Bonner, Huffman ..... | 40 00  |
| 11. Warrant 37, C. M. Scott, U. T. A., 1,000 Mileage for O. H. Bissell, Inspector .....  | 20 00  |
| 11. Warrant 38, S. A. L. Ry., 1,000 Mileage for Inspector Jones .....  | 20 00  |
| 11. Warrant 39, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached .....                                    | 40 00  |
| 18. Warrant 40, S. A. L. Ry., 1,000 Mileage for Inspector Sloan .....  | 20 00  |
| 19. Warrant 41, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby .....   | 20 00  |
| 23. Warrant 42, Jas. D. Lee, Clerical Help, Salary, February, Dated March 1 .....  | 60 00  |
| 25. Warrant 43, S. C. Groeschel, Factory Inspector, Salary, January .....  | 100 00 |
| 25. Warrant 44, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached .....                               | 40 00  |
| 25. Warrant 45, C. M. Scott, U. T. A., 1,000 Mileage for S. C. Groeschel, Factory Inspector .....                              | 20 00  |
| <b>Mar.</b> 1. Warrant 46, A. C. Doyle, Assistant Chemist, Salary, February .....  | 108 33 |
| 1. Warrant 47, O. H. Bissell, Jr., Inspector, Salary, February .....   | 100 00 |
| 1. Warrant 48, J. P. Selby, Inspector, Salary, February .....  | 100 00 |
| 1. Warrant 49, Miss S. J. Cunningham, Stenographer, Salary, February .....   | 70 00  |
| 1. Warrant 50, S. C. Groeschel, Factory Inspector, Salary, February .....  | 100 00 |
| 1. Warrant 51, H. H. Beard, Assistant Chemist, Salary, February .....  | 75 00  |
| 3. Warrant 52, J. D. Dial, Premium on Bond of S. C. Groeschel, Factory Inspector .....   | 12 50  |
| 4. Warrant 53, J. P. Selby, Inspector, Traveling Expenses, statement attached .....  | 60 65  |
| 4. Warrant 54, S. A. L. Ry., 1,000 Mileage for J. P. Selby, Inspector .....  | 20 00  |
| 4. Warrant 55, A. C. Summers, Chemist, Salary, February .....  | 137 50 |
| 7. Warrant 56, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached .....                                | 40 00  |
| 10. Warrant 57, The State Co., Printing and Office Supplies, bill attached .....   | 27 95  |
| 10. Warrant 58, C. M. Tew, Auditor, Gas and Electricity for February, bill attached .....                                      | 16 50  |
| 11. Warrant 59, Columbia Seal and Stamp Co., Office Supplies, bill attached .....  | 10 45  |
| 11. Warrant 60, Western Union Tel. Co., Telegraph Service for February, bill attached .....                                    | 19 88  |
| 17. Warrant 61, Gulf and Atlantic Insurance Co., Premium on Bond O. H. Bissell, Jr., Inspector .....                           | 12 50  |
| 17. Warrant 62, S. B. Hyatt, Supplies and Repairs for Automobile, Dec., Jan., Feb., bill attached .....                        | 49 31  |
| 17. Warrant 63, Terven-Childs Electric Co., Mazda Lamps for Laboratory, bill attached .....                                    | 3 75   |
| 18. Warrant 64, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached .....                                    | 40 00  |
| 18. Warrant 65, Peoples Oil Co., Automobile Supplies, statement attached .....   | 24 20  |
| 18. Warrant 66, C. M. Scott, U. T. A., 1,000-Mileage for J. P. Selby, Inspector .....  | 20 00  |
| 22. Warrant 67, H. W. McCreight, Clerk, Traveling Expenses, statement attached .....   | 6 03   |
| 23. Warrant 68, W. H. Coleman, P. M., P. O. Box Rent April, May, June, Statement attached .....                                | 2 00   |
| 24. Warrant 69, J. D. Dial, Premium on Bond of H. W. McCreight, Clerk, statement attached .....                                | 12 50  |
| 25. Warrant 70, S. M. Sloan, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 28. Warrant 71, J. D. Lee, Clerical Help, Salary, March, Dated April 1 .....   | 60 00  |

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| 31. Warrant 72, S. A. L. Ry., 1,000 Mileage for Inspector Jones .....  | 20 00  |
| 31. Warrant 73, A. C. Summers, Chemist, Salary, March .....  | 137 50 |
| 31. Warrant 74, A. C. Doyle, Assistant Chemist, Salary, March .....  | 108 33 |
| 31. Warrant 75, H. H. Beard, Assistant Chemist, Salary, March .....  | 75 00  |
| 31. Warrant 76, O. H. Bissell, Jr., Inspector, Salary, March .....   | 100 00 |
| 31. Warrant 77, J. P. Selby, Inspector, Salary, March .....  | 100 00 |
| 31. Warrant 78, Ben Wallace, Porter, Services for March .....  | 32 00  |
| 31. Warrant 79, S. C. Groeschel, Factory Inspector, Salary, March .....  | 100 00 |
| Apr. 1. Warrant 80, Southern Ry. Co., 1,000 Mileage for S. C. Groeschel, Factory Inspector .....   | 20 00  |
| 1. Warrant 81, Miss S. J. Cunningham, Stenographer, Salary, March .....  | 85 00  |
| 1. Warrant 82, J. P. Selby, Inspector, Traveling Expenses, statement attached .....  | 73 95  |
| 1. Warrant 83, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby .....  | 20 00  |
| 1. Warrant 84, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Bissell, Jr. ....  | 20 00  |
| 3. Warrant 85, Nathan Burkett, Carpenter, Laboratory Repairs, statement attached .....   | 24 00  |
| 3. Warrant 86, Southern Ry. Co., 1,000 Mileage for Inspector Sloan .....   | 20 00  |
| 4. Warrant 87, J. Roy Jones, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 4. Warrant 88, The State Co., Printing Tax Stamps and Office Supplies, statement attached .....  | 82 27  |
| 4. Warrant 89, The State Co., Printing 8,000 Copies of Inoculation Bulletin, Binding 100 Copies of Annual Report and Cuts for same, statement attached ..... | 421 95 |
| 4. Warrant 90, A. C. Summers, Chemist, Laboratory Expenses for March, statement attached .....   | 31 35  |
| 8. Warrant 91, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 10. Warrant 92, C. M. Tew, Auditor, Gas and Electricity for March, statement attached .....  | 15 30  |
| 13. Warrant 93, Southern Bell Tel. & Tel. Co., Telephone Service, March, statement attached .....  | 19 45  |
| 13. Warrant 94, Western Union Tel. Co., Telegraph Service, statement attached .....  | 32 77  |
| 13. Warrant 95, Beauvis Typewriter Supply Mfg. Co., St. Louis, Mo., 10 Boxes Carbon Paper, statement attached .....  | 15 00  |
| 13. Warrant 96, Manufacturers' Record from 2/16/16-2/16/17 .....   | 4 00   |
| 14. Warrant 97, Southern Express Co., C. O. D. and Charges, Automobile Parts, statement attached .....   | 20 24  |
| 15. Warrant 98, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 15. Warrant 99, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Bissell .....   | 20 00  |
| 18. Warrant 100, J. D. Dial, Renewal of Bonds of Inspectors Sloan and Jones, statement attached .....  | 25 00  |
| 20. Warrant 101, W. H. Coleman, P. M., 4,000 1c. Stamped Envelopes and 1,000 2c. Stamps .....  | 66 24  |
| 21. Warrant 102, The Fisk Rubber Co., Supplies for Automobile, statement attached .....  | 24 23  |
| 21. Warrant 103, Gulf Refining Co., Atlanta, Ga., Refund Tax on Oil Shipped out of State, statement attached .....   | 58 31  |
| 22. Warrant 104, H. C. Bailey, Agent, Doubleday, Page & Co., 7 volumes The Farmers Economics, statement attached .....                                       | 22 05  |
| 22. Warrant 105, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby .....  | 20 00  |
| 22. Warrant 106, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached .....   | 40 00  |

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|     | 25. Warrant 107, J. D. Lee, Clerical Help, Salary, April, Dated April 30.....   | 60 00  |
|     | 27. Warrant 108, Neostyle Co., New York City, One No. 8 Rotary Neostyle Duplicator, statement attached .....                                      | 41 50  |
|     | 27. Warrant 109, Walsh's Directory Co., One Directory 1916, City of Columbia, statement attached .....  | 6 00   |
|     | 28. Warrant 110, Southern Express Co., C. O. D. and Charges, Automobile Parts, statement attached .....   | 20 45  |
|     | 29. Warrant 111, Southern Ry. Co., 1,000 Mileage for Inspector Groeschel.....   | 20 00  |
|     | 30. Warrant 112, S. C. Groeschel, Factory Inspector, Salary, April.....   | 100 00 |
|     | 30. Warrant 113, A. C. Summers, Chemist, Salary, April .....  | 137 50 |
|     | 30. Warrant 114, A. C. Doyle, Assistant Chemist, Salary, April.....   | 108 33 |
|     | 30. Warrant 115, H. H. Beard, Assistant Chemist, Salary, April.....   | 75 00  |
|     | 30. Warrant 116, O. H. Bissell, Jr., Inspector, Salary, April .....   | 100 00 |
|     | 30. Warrant 117, J. P. Selby, Inspector, Salary, April .....  | 100 00 |
|     | 30. Warrant 118, Miss S. J. Cunningham, Stenographer, Salary, April.....  | 85 00  |
|     | 30. Warrant 119, Ben Wallace, Porter, Services for April .....  | 32 00  |
| May | 2. Warrant 120, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....   | 125 00 |
|     | 2. Warrant 121, S. A. L. Ry., 2,000 Mileage for Commissioner Watson and Inspectors Sloan, Huffman and McCreight, Clerk....                        | 40 00  |
|     | 6. Warrant 122, J. P. Selby, Inspector, Traveling Expenses, statement attached.....   | 60 10  |
|     | 6. Warrant 123, C. M. Scott, U. T. A., 1,000 Mileage for J. P. Selby, Inspector .....   | 20 00  |
|     | 6. Warrant 124, W. H. Coleman, P. M., 4,000 2c. Stamped Envelopes, No. 5.....   | 84 96  |
|     | 6. Warrant 125, The State Co., Printing Blanks, Bulletins and Supplies, statement attached .....  | 72 00  |
|     | 6. Warrant 126, C. M. Scott, U. T. A., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....   | 20 00  |
|     | 10. Warrant 127, R. L. Bryan Co., Printing Books and Blanks, statement attached....   | 24 20  |
|     | 10. Warrant 128, Western Union Tel. Co., Telegraph Service for April, statement attached .....  | 12 08  |
|     | 10. Warrant 129, W. H. Coleman, P. M., C. O. D. Automobile Parts, statement attached....  | 2 52   |
|     | 10. Warrant 130, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....   | 40 00  |
|     | 10. Warrant 131, Underwood Typewriter Co., Charlotte, N. C., Repairing Underwood Machine, statement attached.....                                 | 6 20   |
|     | 13. Warrant 132, Paul H. Glenn, Supplies for Upholstering Office Furniture, statement attached .....  | 9 50   |
|     | 13. Warrant 133, S. C. Groeschel, Factory Inspector, Travelling Expenses, statement attached .....  | 40 00  |
|     | 13. Warrant 134, Gibbes-Davis Typewriter Co., Cleaning and Adjusting Underwood Machine, statement attached .....                                  | 5 00   |
|     | 13. Warrant 135, Peace Printing Co., Greenville, Printing 1,000 Labor Law Bulletins, No. 58, statement attached.....                              | 48 40  |
|     | 15. Warrant 136, Southern Ry. Co., 1,000 Mileage for S. C. Groeschel, Factory Inspector .....   | 20 00  |
|     | 15. Warrant 137, N. Mosely, Loris, S. C., 1 Quart Gaso-Tonic for Automobile, statement attached .....   | 2 00   |
|     | 20. Warrant 138, C. M. Scott, U. T. A., 1,000 Mileage for J. P. Selby, Inspector.....   | 20 00  |
|     | 26. Warrant 139, Southern Express Co., C. O. D. Express and Charges, Automobile Parts from Poole & McCullough Motor Co., statement attached ..... | 15 12  |

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| 27. Warrant 140, Southern Ry. Co., 1,000 Mileage for O. H. Bissell, Jr., Inspector....  | 20 00  |
| 27. Warrant 141, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 29. Warrant 142, Southern Express Co., C. O. D. and Charges, Automobile Parts.....  | 26 19  |
| 31. Warrant 143, A. C. Summers, Chemist, Salary, May .....  | 137 50 |
| 31. Warrant 144, A. C. Doyle, Assistant Chemist, Salary, May.....   | 115 00 |
| 31. Warrant 145, H. H. Beard, Assistant Chemist, Salary, May.....   | 75 00  |
| 31. Warrant 146, O. H. Bissell, Inspector, Salary, May .....  | 100 00 |
| 31. Warrant 147, J. P. Selby, Inspector, Salary, May .....  | 100 00 |
| 31. Warrant 148, Miss S. J. Cunningham, Stenographer, Salary, May.....  | 85 00  |
| 31. Warrant 149, J. D. Lee, Clerical Help, Salary, May 1-15.....  | 30 00  |
| 31. Warrant 150, Miss Louise Cunningham, Extra Help, Salary, May 22-31, at \$40.00....  | 13 33  |
| 31. Warrant 151, Ben Wallace, Porter, Services for May .....  | 32 00  |
| 31. Warrant 152, S. C. Groeschel, Factory Inspector, Salary, May.....   | 100 00 |
| June 1. Warrant 153, A. C. Summers, Chemist, Operating Expense of Laboratory for May, statement attached .....  | 29 34  |
| 1. Warrant 154, N. Burkett, Carpenter, Services 21 days, Highway Signs and Repair Work, statement attached.....   | 43 50  |
| 1. Warrant 155, Peoples Oil Co., Augusta, Ga., Refund of Tax on Oil Reshipped Out of State, statement attached.....                                     | 12 53  |
| 3. Warrant 156, J. P. Selby, Inspector, Traveling Expenses, statement attached.....   | 71 05  |
| 3. Warrant 157, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....   | 20 00  |
| 5. Warrant 158, The State Co., Printing and Office Supplies, statement attached.....  | 96 65  |
| 7. Warrant 159, W. H. Coleman, P. M., Stamps for Mailing Bulletins, Marketing, etc....  | 40 00  |
| 16. Warrant 160, S. A. L. Ry., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....   | 20 00  |
| 16. Warrant 161, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....   | 40 00  |
| 17. Warrant 162, Southern Bell Telephone Co., Telephone Service, statement attached.....  | 23 50  |
| 17. Warrant 163, A. C. Doyle, Assistant Chemist, Traveling Expenses, statement attached.....  | 10 85  |
| 17. Warrant 164, Southern Express Co., C. O. D. and Charges, Automobile Parts, statement attached .....   | 28 65  |
| 17. Warrant 165, C. M. Tew, Auditor, Gas and Electricity for May, statement attached.....   | 16 38  |
| 20. Warrant 166, Southern Commercial Congress, Inc., Washington, D. C., Sustaining Membership to January 1, 1917, statement attached .....              | 25 00  |
| 20. Warrant 167, Western Union Tel. Co., Telephone Service for May, statement attached .....  | 35 55  |
| 20. Warrant 168, The Texas Co., Supplies for Automobile, Feb., Mar., Apr., statement attached.....  | 94 41  |
| 22. Warrant 169, A. C. Doyle, Assistant Chemist, Salary June 1-22.....  | 84 33  |
| 22. Warrant 170, Dr. Clarence J. Owens, Sec.-Treas., Membership for 1916, National Association of Commissioners of Agriculture, statement attached..... | 25 00  |
| 22. Warrant 171, Southern Ry. Co., 1,000 Mileage for J. P. Selby, Inspector.....  | 20 00  |
| 23. Warrant 172, Southern Ry. Co., 1,000 Mileage for J. R. Jones, Inspector.....  | 20 00  |
| 23. Warrant 173, S. A. L. Ry., 1,000 Mileage for S. M. Sloan, Inspector.....  | 20 00  |
| 23. Warrant 174, Automobile Transfer Co., Pulling Automobile, statement attached.....   | 8 00   |
| 26. Warrant 175, W. H. Coleman, P. M., 4,000 2c Stamped Envelopes, No. 5.....   | 84 96  |

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| 26. Warrant 176, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached.....                 | 40 00  |
| 29. Warrant 177, W. H. Coleman, P. M., P. O. Box Rent, July, August, September, statement attached.....          | 2 00   |
| 29. Warrant 178, The Fisk Rubber Co., Supplies for Automobile, statement attached.....                           | 64 96  |
| 29. Warrant 179, Cave Vulcanizing Works, Repairs and Supplies for Automobile, statement attached.....            | 20 41  |
| 30. Warrant 180, A. C. Summers, Chemist, Salary, June.....   | 137 50 |
| 30. Warrant 181, H. H. Beard, Assistant Chemist, Salary, June.....   | 75 00  |
| 30. Warrant 182, O. H. Bissell, Jr., Inspector, Salary, June.....  | 100 00 |
| 30. Warrant 183, J. P. Selby, Inspector, Salary, June.....   | 100 00 |
| 30. Warrant 184, Miss S. J. Cunningham, Stenographer, Salary, June.....  | 85 00  |
| 30. Warrant 185, Miss Louise Cunningham, Extra Help, Salary, June.....   | 40 00  |
| 30. Warrant 186, Ben Wallace, Porter, Services, June.....  | 32 00  |
| 30. Warrant 187, S. C. Groeschel, Factory Inspector, Salary, June.....   | 100 00 |
| 30. Warrant 188, C. E. Pettit, Assistant Chemist, Salary, June 26-30.....  | 13 33  |
| July 1. Warrant 189, S. M. Sloan, Inspector, Traveling Expenses, statement attached.....                         | 40 00  |
| 1. Warrant 190, N. Burkett, Expenses placing Highway Signs, etc., statement attached.....                        | 103 18 |
| 1. Warrant 191, Southern Ry. Co., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....                           | 20 00  |
| 3. Warrant 192, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....                       | 40 00  |
| 3. Warrant 193, The State Co., Printing Market Bulletins and Office Supplies, statement attached.....            | 52 30  |
| 5. Warrant 194, J. P. Selby, Inspector, Traveling Expenses, statement attached.....                              | 72 30  |
| 5. Warrant 195, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached.....                  | 40 00  |
| 7. Warrant 196, Western Union Tel. Co., Telegraph Service for June, statement attached.....                      | 33 58  |
| 7. Warrant 197, Southern Bell Tel. Co., Service for June.....  | 24 00  |
| 7. Warrant 198, J. M. VanMetre, Typewriter Table for Office, statement attached.....                             | 6 50   |
| 7. Warrant 199, R. L. Bryan Co., Making Receipt and Warrant Books for Office, statement attached.....            | 19 60  |
| 8. Warrant 200, Gibbes Machinery Co., Auto Repairs and Supplies, statement attached.....                         | 79 00  |
| 8. Warrant 201, Terven-Childs Electric Co., Laboratory Supplies, statement attached.....                         | 8 39   |
| 8. Warrant 202, Bruns & Little, Supplies for Automobile, statement attached.....                                 | 8 66   |
| 8. Warrant 203, Southern Scale and Fixture Co., One Office Chair, statement attached.....                        | 8 65   |
| 11. Warrant 204, S. A. L. Ry., 1,000 Mileage for J. P. Selby, Inspector.....                                     | 20 00  |
| 12. Warrant 205, Columbia Paper Co., No. 10, No. 24 Hemp Twine, statement attached.....                          | 2 50   |
| 12. Warrant 206, Beauvais Typewriter Supply Mfg. Co., St. Louis, Mo., 12 Ribbon Coupons, statement attached..... | 6 00   |
| 12. Warrant 207, Columbia Welding Co., Repairs to Automobile, statement attached.....                            | 10 25  |
| 12. Warrant 208, Perry-Mann Electric Co., Supplies and Repairs to Automobile, statement attached.....            | 23 89  |
| 13. Warrant 209, Southern Ry. Co., 1,000 Mileage for S. C. Groeschel, Factory Inspector.....                     | 20 00  |
| 15. Warrant 210, S. A. L. Ry. Co., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....                          | 20 00  |

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| 15. Warrant 211, Southern Express Co., C. O. D. and Charges, Automobile Parts, statement attached .....                        | 30 67  |
| 19. Warrant 212, Southern Ry. Co., 1,000 Mileage for H. W. McCreight, Clerk .....  | 20 00  |
| 24. Warrant 213, Southern Ry. Co., 1,000 Mileage for J. R. Jones, Inspector .....  | 20 00  |
| 26. Warrant 214, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes No. 8 .....   | 57 80  |
| 29. Warrant 215, H. W. McCreight, Clerk, Expense Account, April-July, statement attached .....                                 | 6 94   |
| 29. Warrant 216, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby .....  | 20 00  |
| 29. Warrant 217, O. H. Bissell, Jr., Inspector, Traveling Expenses statement attached .....                                    | 40 00  |
| 31. Warrant 218, S. C. Groeschel, Factory Inspector, Salary, July .....  | 100 00 |
| 31. Warrant 219, A. C. Summers, Chemist, Salary, July .....  | 137 50 |
| 31. Warrant 220, H. H. Beard, Assistant Chemist, Salary, July .....  | 75 00  |
| 31. Warrant 221, O. H. Bissell, Jr., Inspector, Salary, July .....   | 100 00 |
| 31. Warrant 222, J. P. Selby, Inspector, Salary, July .....  | 100 00 |
| 31. Warrant 223, Miss S. J. Cunningham, Stenographer, Salary, July .....   | 85 00  |
| 31. Warrant 224, Miss Louise Cunningham, Extra Help, Salary, July .....  | 40 00  |
| 31. Warrant 225, Ben Wallace, Porter, Services for July .....  | 32 00  |
| 31. Warrant 226, C. E. Pettit, Assistant Chemist, Salary, July .....   | 80 00  |
| Aug. 1. Warrant 227, Nathan Burkett, Carpenter, Labor, Highway Posting, statement attached .....                               | 91 60  |
| 1. Warrant 228, The State Co., Printing and Office Supplies, statement attached .....  | 69 37  |
| 3. Warrant 229, The State Co., Printing 3,500 Highway Maps in Five Colors and Making Thirteen Plates, statement attached ..... | 350 00 |
| 3. Warrant 230, Western Union Tel. Co., Telegraph Service, statement attached .....  | 42 53  |
| 3. Warrant 231, The Texas Co., Supplies for Automobile, statement attached .....   | 62 89  |
| 3. Warrant 232, G. M. Carpenter, Office Supplies, statement attached .....   | 10 05  |
| 3. Warrant 233, Gibbs Machinery Co., Automobile Repairs and Supplies, statement attached .....                                 | 18 22  |
| 3. Warrant 234, R. L. Bryan Co., Printing Books and Blanks, statement attached .....   | 73 05  |
| 3. Warrant 235, S. B. McMaster, Supplies for Automobile, statement attached .....  | 3 00   |
| 3. Warrant 236, Lorick & Lowrance, Supplies for Highway Marking, statement attached .....                                      | 28 98  |
| 3. Warrant 237, Columbia Lumber and Mfg. Co., Supplies for Highway Marking, statement attached .....                           | 30 50  |
| 4. Warrant 238, W. H. Coleman, P. M., Office Postage .....   | 20 00  |
| 5. Warrant 239, J. P. Selby, Inspector, Traveling Expenses, statement attached .....   | 58 75  |
| 7. Warrant 240, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Bissell .....   | 20 00  |
| 7. Warrant 241, A. C. Summers, Chemist, Laboratory Expenses for July, statement attached .....                                 | 27 61  |
| 9. Warrant 242, T. T. Huffman, Inspector, Traveling Expenses, statement attached .....   | 40 00  |
| 9. Warrant 243, Southern Express Co., C. O. D. Express, Automobile Parts, statement attached .....                             | 48 96  |
| 11. Warrant 244, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached .....                                   | 40 00  |
| 12. Warrant 245, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached .....                              | 40 00  |
| 21. Warrant 246, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes, No. 8 .....  | 57 80  |

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|       | 22. Warrant 247, Southern Ry. Co., 1,000 Mileage for Inspector Sloan.....   | 20 00  |
|       | 22. Warrant 248, W. H. Coleman, P. M., 4,000 2c. Stamped Envelopes, No. 5.....  | 84 96  |
|       | 26. Warrant 249, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....  | 20 00  |
|       | 28. Warrant 250, Southern Express, C. O. D. Express, Automobile Parts, statement attached.....                            | 13 76  |
|       | 29. Warrant 251, S. A. L. Ry., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....                                       | 20 00  |
|       | 29. Warrant 252, Southern Express Co., C. O. D. Express, Automobile Parts.....  | 151 29 |
|       | 31. Warrant 253, A. C. Summers, Chemist, Salary, August.....  | 137 50 |
|       | 31. Warrant 254, H. H. Beard, Assistant Chemist, Salary, August.....  | 75 00  |
|       | 31. Warrant 255, O. H. Bissell, Jr., Inspector, Salary, August.....   | 100 00 |
|       | 31. Warrant 256, J. P. Selby, Inspector, Salary, August.....  | 100 00 |
|       | 31. Warrant 257, Miss S. J. Cunningham, Stenographer, Salary, August.....   | 85 00  |
|       | 31. Warrant 258, Ben Wallace, Porter, Services, August.....   | 32 00  |
|       | 31. Warrant 259, S. C. Groeschel, Factory Inspector, Salary, August.....  | 100 00 |
|       | 31. Warrant 260, Miss Louise Cunningham, Extra Help, Salary, August.....  | 40 00  |
|       | 31. Warrant 261, C. E. Pettit, Assistant Chemist, Salary, August.....   | 80 00  |
| Sept. | 1. Warrant 262, Southern Ry. Co., 1,000 Mileage for J. R. Jones, Inspector.....   | 20 00  |
|       | 2. Warrant 263, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....                                | 40 00  |
|       | 2. Warrant 264, A. C. Summers, Chemist, Laboratory, statement attached.....   | 26 50  |
|       | 4. Warrant 265, J. P. Selby, Inspector, Traveling Expenses, statement attached.....                                       | 56 25  |
|       | 9. Warrant 266, S. A. L. Ry., 1,000 Mileage for S. C. Groeschel, Factory Inspector.....                                   | 20 00  |
|       | 11. Warrant 267, Southern Express Co., C. O. D. Express, Automobile Parts, statement attached.....                        | 48 21  |
|       | 11. Warrant 268, The State Co., Printing and Office Supplies, statement attached.....                                     | 45 05  |
|       | 12. Warrant 269, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....  | 20 00  |
|       | 14. Warrant 270, Fisk Rubber Co., Supplies for Automobile, statement attached.....  | 89 22  |
|       | 14. Warrant 271, The Texas Co., Supplies for Automobile, statement attached.....  | 59 64  |
|       | 19. Warrant 272, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes, No. 8.....  | 57 80  |
|       | 22. Warrant 273, Southern Ry. Co., 1,000 Mileage for Inspector Bissell.....   | 20 00  |
|       | 23. Warrant 274, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....  | 20 00  |
|       | 26. Warrant 275, T. T. Huffman, Inspector, Traveling Expenses, statement attached.....                                    | 40 00  |
|       | 29. Warrant 276, Standard Oil Co., Charlotte, N. C., Refund of Tax on Oil Reshipped Out of State, statement attached..... | 80 16  |
|       | 30. Warrant 277, A. C. Summers, Chemist, Salary, September.....   | 137 50 |
|       | 30. Warrant 278, H. H. Beard, Assistant Chemist, Salary, September.....   | 75 00  |
|       | 30. Warrant 279, O. H. Bissell, Jr., Inspector, Salary, September.....  | 100 00 |
|       | 30. Warrant 280, J. P. Selby, Inspector, Salary, September.....   | 100 00 |
|       | 30. Warrant 281, Miss S. J. Cunningham, Stenographer, Salary, September.....  | 85 00  |
|       | 30. Warrant 282, Ben Wallace, Porter, Services, September.....  | 32 00  |
|       | 30. Warrant 283, Miss Louise Cunningham, Extra Help, Salary, September.....   | 40 00  |
|       | 30. Warrant 284, S. C. Groeschel, Factory Inspector, Salary, September.....   | 100 00 |
|       | 30. Warrant 285, C. E. Pettit, Assistant Chemist, Salary, September.....  | 80 00  |
| Oct.  | 4. Warrant 286, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....                                   | 75 00  |



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| 6. Warrant 287, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....                                 | 40 00  |
| 7. Warrant 288, J. P. Selby, Inspector, Traveling Expenses, statement attached.....  | 72 10  |
| 9. Warrant 289, C. M. Tew, Auditor, Gas and Electricity, statement attached.....   | 14 00  |
| 13. Warrant 290, The Fisk Rubber Co., Supplies for Automobile, statement attached.....                                     | 75 38  |
| 16. Warrant 291, T. T. Huffman, Inspector, Traveling Expenses, Automobile, statement attached.....                         | 40 00  |
| 17. Warrant 292, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes, No. 8.....   | 57 80  |
| 31. Warrant 293, Jas. D. Lee, Extra Help, Salary, October.....   | 60 00  |
| 19. Warrant 294, Peoples Oil Co., Supplies for Automobile, statement attached.....   | 7 40   |
| 19. Warrant 295, The Texas Co., Supplies for Automobile, statement attached.....   | 27 19  |
| 19. Warrant 296, Habenicht-McDougall Co., Supplies for Automobile, statement attached.....                                 | 11 56  |
| 19. Warrant 297, Cave Vulcanizing Works, Supplies for Automobile, statement attached.....                                  | 12 06  |
| 19. Warrant 298, Consolidated Auto Co., Supplies for Automobile, statement attached.....                                   | 16 70  |
| 19. Warrant 299, Gulf Refining Co., Atlanta, Ga., Refund of Tax on Oil Reshipped out of the State, statement attached..... | 19 27  |
| 21. Warrant 300, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached.....                           | 40 00  |
| 25. Warrant 301, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached.....                                | 40 00  |
| 25. Warrant 302, Southern Ry. Co., 1,000 Mileage for Inspector Bissell.....  | 20 00  |
| 31. Warrant 303, A. C. Summers, Chemist, Salary, October.....  | 137 50 |
| 31. Warrant 304, H. H. Beard, Assistant Chemist, Salary, October.....  | 75 00  |
| 31. Warrant 305, O. H. Bissell, Jr., Inspector, Salary, October.....   | 100 00 |
| 31. Warrant 306, J. P. Selby, Inspector, Salary October.....   | 100 00 |
| 31. Warrant 307, Miss S. J. Cunningham, Stenographer, Salary, October.....   | 85 00  |
| 31. Warrant 308, Ben Wallace, Porter, Services for October.....  | 32 00  |
| 31. Warrant 309, S. C. Groeschel, Factory Inspector, Salary, October.....  | 100 00 |
| 31. Warrant 310, Miss Louise Cunningham, Extra Help, Salary, October.....  | 40 00  |
| 31. Warrant 311, C. E. Pettit, Assistant Chemist, Salary, October.....   | 80 00  |
| 31. Warrant 312, Southern Ry. Co., 1,000 Mileage for S. C. Groeschel, Factory Inspector.....                               | 20 00  |
| Nov. 1. Warrant 313, A. C. Summers, Chemist, Laboratory Expenses, statement attached.....                                  | 41 25  |
| 2. Warrant 314, Columbia Seal and Stamp Co., Office Supplies, statement attached.....                                      | 12 15  |
| 3. Warrant 315, W. H. Coleman, P. M., 5,000 No. 8 2c. Stamped Envelopes.....   | 110 00 |
| 3. Warrant 316, Jas. D. Lee, Clerical Help, Salary, November.....  | 60 00  |
| 6. Warrant 317, J. P. Selby, Inspector, Traveling Expenses, statement attached.....  | 45 85  |
| 6. Warrant 318, W. H. Coleman, P. M., Office Postage.....  | 50 00  |
| 8. Warrant 319, Nathan Burkett, Carpenter, Expense Account Exhibits, statement attached.....                               | 66 00  |
| 13. Warrant 320, W. H. Coleman, P. M., 5,000 1c. Stamped Envelopes, No. 8.....   | 57 80  |
| 13. Warrant 321, Eimer & Amend, 205 Third Ave., New York City, Laboratory Supplies, statement attached.....                | 35 48  |
| 13. Warrant 322, J. M. VanMetre, Office Supplies, statement attached.....  | 3 50   |
| 14. Warrant 323, Western Union Tel. Co., Service, statement attached.....  | 80 92  |
| 14. Warrant 324, Pain's Fireworks, 26 Park Place, New York City, Flags and Supplies for Exhibit, statement attached.....   | 59 50  |

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| 18. Warrant 325, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Bissell.....   | 20 00  |
| 18. Warrant 326, O. H. Bissell, Jr., Inspector, Travelling Expenses, statement attached.....                             | 40 00  |
| 18. Warrant 327, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Selby.....   | 20 00  |
| 21. Warrant 328, R. L. Bryan Co., Printing and Office Supplies, statement attached.....                                  | 36 00  |
| 22. Warrant 329, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....                                 | 125 00 |
| 22. Warrant 330, S. A. L. Ry., 2,000 Mileage for Commissioner Watson, Pullman, Berth and Difference on Ticket.....       | 46 60  |
| 27. Warrant 331, Lorick & Lowrance, Supplies for State Exhibits, statement attached.....                                 | 49 82  |
| 27. Warrant 332, Cave Vulcanizing Works, Supplies for Automobile, statement attached.....                                | 43 09  |
| 27. Warrant 333, Habenicht-McDougall Co., Supplies for Automobile, statement attached.....                               | 19 20  |
| 27. Warrant 334, Perry-Mann Electric Co., Supplies for Exhibits, Laboratory, Automobile, statement attached.....         | 34 18  |
| 27. Warrant 335, Columbia Lumber and Mfg. Co., Supplies for Exhibit, statement attached.....                             | 73 06  |
| 28. Warrant 336, Southern Ry. Co., 1,000 Mileage for J. P. Selby, Inspector.....   | 20 00  |
| 30. Warrant 337, S. C. Groeschel, Factory Inspector, Salary, November.....   | 100 00 |
| 29. Warrant 338, Southern Ry. Co., 1,000 Mileage for J. R. Jones, Inspector.....   | 20 00  |
| 29. Warrant 339, J. R. Jones, Inspector, Traveling Expenses, statement attached.....                                     | 40 00  |
| 30. Warrant 340, A. C. Summers, Chemist, Salary, November.....   | 137 50 |
| 30. Warrant 341, H. H. Beard, Assistant Chemist, Salary, November.....   | 75 00  |
| 30. Warrant 342, O. H. Bissell, Jr., Inspector, Salary, November.....  | 100 00 |
| 30. Warrant 343, J. P. Selby, Inspector, Salary, November.....   | 100 00 |
| 30. Warrant 344, Miss S. J. Cunningham, Stenographer, Salary, November.....  | 85 00  |
| 30. Warrant 345, Ben Wallace, Porter, Services for November.....   | 32 00  |
| 30. Warrant 346, C. E. Pettit, Assistant Chemist, Salary, November.....  | 80 00  |
| Dec. 1. Warrant 347, S. A. L. Ry., 1,000 Mileage for O. H. Bissell, Jr., Inspector.....                                  | 20 00  |
| 2. Warrant 348, J. P. Selby, Inspector, Traveling Expenses, statement attached.....                                      | 61 95  |
| 5. Warrant 349, W. H. Coleman, P. M., 6,000 lc. Stamped Envelopes, No. 8.....  | 69 36  |
| 5. Warrant 350, O. H. Bissell, Jr., Inspector, Travelling Expenses, statement attached.....                              | 40 00  |
| 5. Warrant 351, Standard Oil Co., Charlotte, N. C., Refund of Tax on Oil Reshipped Out of State, statement attached..... | 61 31  |
| 7. Warrant 352, Southern Express Co., C. O. D. Express, Parts for Automobile, statement attached.....                    | 8 60   |
| 9. Warrant 353, Southern Ry. Co., 1,000 Mileage for Inspectors Selby and Harris.....                                     | 40 00  |
| 12. Warrant 354, Nathan Burkett, Carpenter, Labor, Highway Posting, statement attached.....                              | 15 00  |
| 13. Warrant 355, W. H. Coleman, P. M., C. O. D. Parcel Post, Parts for Automobile, statement attached.....               | 4 16   |
| 14. Warrant 356, The Texas Co., Supplies for Automobile, statement attached.....   | 34 25  |
| 14. Warrant 357, Western Union Telegraph Co., Services, statement attached.....  | 48 50  |
| 14. Warrant 358, Gibbes Machinery Co., Supplies for Automobile, statement attached.....                                  | 10 45  |
| 14. Warrant 359, Cave Vulcanizing Works, Supplies for Automobile, statement attached.....                                | 27 62  |
| 16. Warrant 360, C. M. Scott, U. T. A., 1,000 Mileage for Inspector Bissell.....   | 20 00  |
| 19. Warrant 361, W. H. Coleman, P. M., Office Postage.....   | 50 00  |

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| 21. Warrant 362, O. H. Bissell, Jr., Inspector, Traveling Expenses, statement attached   | 40 00              |                    |
| 21. Warrant 363, Jas. D. Lee, Clerical Help, Salary, Part of December  | 50 00              |                    |
| 21. Warrant 364, H. W. McCreight, Clerk, Expenses, July 29 to Dec. 18, statement attached  | 8 65               |                    |
| 21. Warrant 365, American Can Co., 447 W. 14th St., New York City, 201 Oil Sample Cans.  | 24 88              |                    |
| 21. Warrant 366, A. C. Summers, Chemist, Salary, December  | 137 50             |                    |
| 21. Warrant 367, H. H. Beard, Assistant Chemist, Salary, December  | 80 00              |                    |
| 21. Warrant 368, O. H. Bissell, Jr., Inspector, Salary, December   | 100 00             |                    |
| 21. Warrant 369, J. P. Selby, Inspector, Salary, December  | 100 00             |                    |
| 21. Warrant 370, Miss S. J. Cunningham, Stenographer, Salary, December   | 85 00              |                    |
| 21. Warrant 371, Ben Wallace, Porter, Services for December  | 32 00              |                    |
| 21. Warrant 372, S. C. Groeschel, Factory Inspector, Salary, December  | 100 00             |                    |
| 21. Warrant 373, C. E. Pettit, Assistant Chemist, Salary, December   | 90 00              |                    |
| 22. Warrant 374, N. Burkett, Carpenter, Labor, Automobile Account, statement attached  | 25 00              |                    |
| 26. Warrant 375, J. P. Vaughan, Services, Office Expense, statement attached   | 5 00               |                    |
| 26. Warrant 376, C. M. Scott, U. T. A., 1,000 Mileage for S. C. Groeschel, Factory Inspector   | 20 00              |                    |
| 26. Warrant 377, W. H. Coleman, P. M., P. O. Box Rent, Jan., Feb., Mar., 1917  | 2 00               |                    |
| 26. Warrant 378, Peoples Oil Co., Supplies for Automobile, statement attached  | 6 52               |                    |
| 26. Warrant 379, S. B. Hyatt, Storage and Repairs for Automobile, statement attached   | 17 60              |                    |
| 26. Warrant 380, P-C Electric Co., Supplies for State Exhibit, statement attached  | 17 78              |                    |
| 27. Warrant 381, W. H. Coleman, P. M., 4,000 No. 5, 2c Stamped Envelopes   | 84 96              |                    |
| 28. Warrant 382, Brown & Pope, Drayage Services for Exhibits, statement attached   | 48 00              |                    |
| 29. Warrant 383, The Murray Drug Co., Supplies for Posting Highways, statement attached  | 7 15               |                    |
| 30. Warrant 384, Hon. S. T. Carter, State Treasurer, for Conversion into General Fund of the State, as per Section 16, Appropriation Act of 1916 | 6,000 00           |                    |
| 30. Warrant 385, Lutheran Board of Publication, Printing Marl Bulletins, 2,325 Copies of 88 pages  | 153 00             |                    |
| Balance on Deposit With State Treasurer  | 1,889 68           |                    |
|  | <b>\$27,427 35</b> | <b>\$27,427 35</b> |

#### APPENDIX IV.

##### DETAILED STATEMENT SHOWING WARRANTS ISSUED ON "ACCOUNT SPECIAL (\$4,000) FOR CONTINGENT FUND."

(Paid from Funds From Feed and Oil Accounts as per Provisions of Appropriation Act of 1916, and Also Included in Statements of Those Accounts.)

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| Feb. 28. Warrant 1, E. C. Bridgman, Publisher, 86 Warren St.                                 | \$34 00 |
| Mar. 2. Warrant 2, News & Courier, Subscription, one year in advance                         | 8 00    |
| 10. Warrant 3, The State Co., Printing 700 Labor Reports, Cuts and Maps for Same             | 160 30  |
| 17. Warrant 4, The State Co., 1200 Copies of General Report for 1915, Cuts and Maps for same | 477 50  |
| 17. Warrant 5, Gulf & Atlantic Insurance Co., Premium Bond Commissioner for 1916             | 80 00   |

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| <b>Apr.</b>  | 3. Warrant 6, J. D. Lee, for Nathan Burkett, Carpenter, Expense Account, Repairs at Laboratory, statement attached.....                     | 24 00  |
|              | 4. Warrant 7, The State Co., Printing 8,000 Cow Pea Bulletins No. 57 and Cuts for Same and Binding 100 Copies Annual Report in Cloth.....   | 421 95 |
|              | 13. Warrant 8, Manufacturers Record, Subscription, One Year in Advance.....   | 4 00   |
|              | 22. Warrant 9, H. C. Bailey, Doubleday, Page & Co., 7 Volumes The Farmers Cyclopaedia.....  | 22 05  |
| <b>May</b>   | 2. Warrant 10, Nathan Burkett, Carpenter, Repairing Office Furniture, Services Three Days, statement attached.....                          | 6 00   |
|              | 2. Warrant 11, E. J. Watson, Commissioner, Travelling Expenses, statement attached.....   | 28 03  |
|              | 13. Warrant 12, Peace Printing Co., Greenville, S. C., 1,000 Labor Law Bulletins, statement attached.....                                   | 48 40  |
| <b>June</b>  | 1. Warrant 13, N. Burkett, Carpenter, 21 days Services, Repair Work and Highway Signs, statement attached.....                              | 43 50  |
|              | 17. Warrant 14, Soil Survey, Dr. Jacob G. Lipman, Editor, Subscription, One Year in Advance.....  | 3 00   |
|              | 20. Warrant 15, Southern Commercial Congress, Sustaining Membership to Jan. 1, 1917, statement attached.....                                | 25 00  |
|              | 22. Warrant 16, Dr. Clarence J. Owens, Secretary-Treasurer, 1916 Membership, National Commissioners of Agriculture, statement attached..... | 25 00  |
| <b>July</b>  | 1. Warrant 17, N. Burkett, Expenses, Highway Signs, statement attached.....   | 103 18 |
|              | 17. Warrant 18, R. M. Mazyck, Shipping Highway Sign Material, statement attached.....   | 8 46   |
| <b>Aug.</b>  | 1. Warrant 19, N. Burkett, Carpenter, Labor, Highway Posting, statement attached..  | 91 60  |
|              | 3. Warrant 20, The State Co., Printing 3,500 1916 Maps and Making Plates, statement attached.....   | 350 00 |
|              | 3. Warrant 21, Lorick & Lowrance, Supplies for Making Highway, etc.....   | 28 98  |
|              | 3. Warrant 22, Columbia Lumber & Mfg. Co., Supplies for Marking Highways, etc...  | 30 50  |
| <b>Sept.</b> | 15. Warrant 23, Murray Drug Co., Supplies for Marking Highways, etc.....  | 53 25  |
|              | 29. Warrant 24, Automobile Transfer Co., Services, statement attached.....  | 50 00  |
|              | 29. Warrant 25, Charleston American, Charleston, S. C., Subscription One Year, statement attached.....                                      | 6 00   |
| <b>Oct.</b>  | 2. Warrant 26, N. Burkett, Carpenter, Services, 26 Days and Helper, statement attached.....   | 59 75  |
| <b>Nov.</b>  | 8. Warrant 27, N. Burkett, Carpenter, Services, October, Exhibit, statement attached.....   | 66 00  |
|              | 14. Warrant 28, Pain's Manhattan Beach Fireworks, Flags and Bunting for State Exhibit, statement attached.....                              | 59 50  |
|              | 20. Warrant 29, Southern Good Roads, Lexington, N. C., Subscription, October 1916 to 1917, statement attached.....                          | 1 00   |
|              | 20. Warrant 30, Record Publishing Co., Subscription, September 4, 1916, to September 4, 1917, statement attached.....                       | 6 00   |
|              | 20. Warrant 31, C. O. Brown & Bro., Supplies for Highway Marking and State Exhibit, account in full.....                                    | 14 05  |
|              | 20. Warrant 32, Columbia Sign Works, Painting Two Banners, Good Roads, statement attached.....  | 4 00   |
|              | 22. Warrant 33, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....   | 17 65  |
|              | 22. Warrant 34, E. J. Watson, Commissioner, Traveling Expenses, statement attached.....   | 125 00 |

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|--|-------------------|-------------------|
| 27. Warrant 35, Lorick & Lowrance, Supplies for State Exhibit, etc., statement attached  | 49 82             |                   |
| 27. Warrant 36, Perry-Mann Electric Co., Supplies for Exhibit, Laboratory and Automobile, statement attached   | 34 18             |                   |
| 27. Warrant 37, Columbia Lumber & Mfg. Co., Lumber for Exhibit, statement attached   | 73 06             |                   |
| Dec. 1. Warrant 38, The State Co., Advertisement, Notice to Manufacturers, statement attached  | 5 62              |                   |
| 12. Warrant 39, Nathan Burkett, Carpenter, 71-2 Days' Services, Highway Signs, statement attached  | 15 00             |                   |
| 14. Warrant 40, J. L. Minnaugh & Co., Supplies for Exhibit and Office, statement attached  | 27 39             |                   |
| 14. Warrant 41, Henry Romelke, Inc., New York City, Services to December 1, 1916, statement attached   | 1 30              |                   |
| 14. Warrant 42, The Greenville News Co., Advertising Notice to Manufacturers, Labor Reports  | 4 25              |                   |
| 14. Warrant 43, The Pee Dee Advocate, Bennettsville, S. C., Advertising Notice to Manufacturers, Labor Reports, statement attached                                     | 2 10              |                   |
| 14. Warrant 44, The Anderson Intelligencer, Advertising Notice to Manufacturers, Labor Reports   | 3 30              |                   |
| 21. Warrant 45, The Spartanburg Herald, Advertising Notice to Manufacturers, Labor Reports   | 5 50              |                   |
| 26. Warrant 46, J. P. Vaughan, Services Rendered, statement attached   | 5 00              |                   |
| 26. Warrant 47, B-C Electric Co., Supplies for State Exhibit, statement attached   | 17 78             |                   |
| 28. Warrant 48, Brown & Pope, Drayage Service, October, November and December, statement attached  | 48 00             |                   |
| 29. Warrant 49, Caughman's Auto Transfer Co., October and November, Transfer Service, Account Exhibit, statement attached  | 11 00             |                   |
| 29. Warrant 50, The Murray Drug Co., Supplies for Posting Highways, statement attached   | 7 15              |                   |
| 30. Warrant 51, S. A. L. Ry. Co., 2,000 mileage for S. M. Sloan, S. C. Groeschel, W. S. Bonner, Inspectors, and E. J. Watson, Commissioner, and H. W. McCreight, Clerk | 40 00             |                   |
| 30. Warrant 52, E. C. Bridgman, Account Printing 3,000 Road Maps of S. C., statement attached  | 160 00            |                   |
| 30. Warrant 53, Lutheran Board of Publication, Printing Marl Bulletins, 2,325 Copies of 88 pages, statement attached   | 153 00            |                   |
|  | <b>\$3,150 10</b> | <b>\$3,150 10</b> |

## APPENDIX V.

### DETAILED STATEMENT OF RECEIPTS AND DISBURSEMENTS OF FUND DERIVED FROM SEED INSPECTION LICENSE FEES, 1916.

|   |                   |
|---|-------------------|
| Jan. 1, Balance on Deposit with State Treasurer |                   |
| Feb. 1, By Deposit with State Treasurer         | \$1,523 50        |
| Mar. 1, By Deposit with State Treasurer         | 498 50            |
| Apr. 1, By Deposit with State Treasurer         | 270 00            |
| May 1, By Deposit with State Treasurer          | 325 00            |
| June 1, By Deposit With State Treasurer         | 132 50            |
| July 1, By Deposit with State Treasurer         | 110 00            |
| Aug. 1, By Deposit with State Treasurer         | 46 00             |
| Sept. 1, By Deposit with State Treasurer        | 10 00             |
| Oct. 1, By Deposit with State Treasurer         | 75 00             |
| Nov. 1, By Deposit with State Treasurer         | 97 50             |
| Dec. 1, By Deposit with State Treasurer         | 75 00             |
| Dec. 31, By Deposit with State Treasurer        | 17 50             |
|   | <b>\$3,180 50</b> |

## DISBURSEMENTS.

|       |     |   |        |
|-------|-----|---|--------|
| 1916. |     |   |        |
| Feb.  | 1.  | Warrant 1, J. H. Woodward, Inspector, Salary, January.....  | 100 00 |
|       | 5.  | Warrant 2, The State Co., Printing Seed Tax Books and Blanks, bill attached...  | 15 00  |
|       | 11. | Warrant 3, Southern Ry. Co., 1,000 Mileage for J. H. Woodward, Inspector.....   | 20 00  |
|       | 19. | Warrant 4, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....   | 40 00  |
|       | 22. | Warrant 5, R. T. W. Roberts & Son, Coosawatchie, S. C., Duplicate License Fee, No. 620, Feb. 18, 1916, refunded.....                      | 2 50   |
|       | 23. | Warrant 6, B. W. Burdette & Bros. Co., Simpsonville, S. C., License No. 588, Duplicate of No. 80, refunded.....                           | 2 50   |
|       | 24. | Warrant 7, Southern Ry. Co., 1,000 Mileage for J. H. Woodward, Inspector.....   | 20 00  |
|       | 25. | Warrant 8, Miss Clara Yarborough, Stenographer, Salary, January.....  | 60 00  |
| Mar.  | 1.  | Warrant 9, Miss Clara Yarborough, Stenographer, Salary, February.....   | 60 00  |
|       | 1.  | Warrant 10, J. H. Woodward, Inspector, Salary, February.....  | 100 00 |
|       | 4.  | Warrant 11, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 10. | Warrant 12, The State Co., Printing Seed Tax Book and Binders, statement attached.....  | 13 50  |
|       | 11. | Warrant 13, C. M. Scott, U. T. A., 1,000 mileage for J. H. Woodward, Inspector.....   | 20 00  |
|       | 11. | Warrant 14, C. M. Scott, U. T. A., 1,000 mileage for O. H. Bissell, Jr., Inspector.....   | 20 00  |
|       | 15. | Warrant 15, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 25. | Warrant 16, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....  | 20 00  |
|       | 31. | Warrant 17, Jno. P. Helyan, Secretary-Treasurer, Annual Dues, Association Seed Analyst of North America for 1916, statement attached..... | 5 00   |
|       | 31. | Warrant 18, J. H. Woodward, Inspector, Salary, March.....   | 100 00 |
|       | 31. | Warrant 19, Miss Clara Yarborough, Stenographer, Salary, March.....   | 60 00  |
| Apr.  | 1.  | Warrant 20, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 15. | Warrant 21, Southern Ry. Co., 1,000 mileage each for Inspectors Woodward and Blackwell.....   | 40 00  |
|       | 21. | Warrant 22, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 30. | Warrant 23, J. H. Woodward, Inspector, Salary, April.....   | 100 00 |
|       | 30. | Warrant 24, Miss Clara Yarborough, Stenographer, Salary, April.....   | 60 00  |
| May.  | 6.  | Warrant 25, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....  | 20 00  |
|       | 10. | Warrant 26, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 10. | Warrant 27, R. L. Bryan Co., Printing Seed License Tax Book, statement attached..   | 7 25   |
|       | 13. | Warrant 28, J. H. Woodward, Inspector, Salary, May.....   | 100 00 |
|       | 19. | Warrant 29, W. H. Coleman, P. M., Postage Stamps for office.....  | 50 00  |
|       | 19. | Warrant 30, S. A. L. Ry., 1,000 mileage for B. Harris, Inspector.....   | 20 00  |
|       | 27. | Warrant 31, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....  | 20 00  |
|       | 27. | Warrant 32, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....  | 40 00  |
|       | 31. | Warrant 33, Miss Clara Yarborough, Stenographer, Salary, May.....   | 60 00  |

|          |  |        |
|----------|--|--------|
| June 10. | Warrant 34, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 17.      | Warrant 35, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....                                       | 20 00  |
| 27.      | Warrant 36, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 30.      | Warrant 37, J. H. Woodward, Inspector, Salary, June.....   | 100 00 |
| 30.      | Warrant 38, Miss Clara Yarborough, Stenographer, Salary, June.....   | 60 00  |
| July 8.  | Warrant 39, C. M. Scott, U. T. C., 1,000 mileage for J. H. Woodward, Inspector .....                                 | 20 00  |
| 15.      | Warrant 40, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 19.      | Warrant 41, W. H. Coleman, P. M., 2,000 2 cent Stamped Envelopes No. 8.....  | 44 00  |
| 19.      | Warrant 42, Miss Clara Yarborough, Salary, July (dated 7-31).....  | 60 00  |
| 29.      | Warrant 43, C. M. Scott, U. T. A., 1,000 mileage for J. H. Woodward, Inspector .....                                 | 20 00  |
| 31.      | Warrant 44, J. H. Woodward, Inspector, Salary, July.....   | 100 00 |
| Aug. 7.  | Warrant 45, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 9.       | Warrant 46, W. H. Coleman, P. M., Office Postage .....   | 10 00  |
| 19.      | Warrant 47, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....                                       | 20 00  |
| 24.      | Warrant 48, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 26.      | Warrant 49, A. L. Mahaffey, Laurens, S. C., Refund of Duplicate Seed License Fee No. 1051, Duplicate of No. 450..... | 2 50   |
| 31.      | Warrant 50, J. H. Woodward, Inspector, Salary, August.....   | 100 00 |
| 31.      | Warrant 51, Miss Clara Yarborough, Stenographer, Salary, August.....   | 60 00  |
| Sept. 7. | Warrant 52, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....                                       | 20 00  |
| 7.       | Warrant 53, Baskin-Rogers Hdw. Co., Refund of Duplicate Seed License Fee No. 1060, Duplicate of No. 47.....          | 2 50   |
| 16.      | Warrant 54, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 29.      | Warrant 55, Southern Ry. Co., 1,000 mileage for Inspector Woodward.....  | 20 00  |
| 30.      | Warrant 56, J. H. Woodward, Inspector, Salary, September.....  | 100 00 |
| 30.      | Warrant 57, Miss Clara Yarborough, Stenographer, Salary, September.....  | 60 00  |
| Oct. 6.  | Warrant 58, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 10.      | Warrant 59, Southern Express Co., C. O. D. Express, Parts for Automobile, statement attached.....                    | 11 89  |
| 11.      | Warrant 60, W. H. Coleman, P. M., 4,000 No. 5, 2 cent Stamped Envelopes.....   | 84 96  |
| 14.      | Warrant 61, S. A. L. Ry., 1,000 mileage for B. Harris, Inspector.....  | 20 00  |
| 14.      | Warrant 62, C. M. Scott, U. T. A., 1,000 mileage for J. P. Selby, Inspector.....                                     | 20 00  |
| 20.      | Warrant 63, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 31.      | Warrant 64, J. H. Woodward, Inspector, Salary, October.....  | 100 00 |
| 31.      | Warrant 65, Miss Clara Yarborough, Stenographer, Salary, October.....  | 60 00  |
| Nov. 11. | Warrant 66, Southern Ry. Co., 1,000 mileage for J. H. Woodward, Inspector.....                                       | 20 00  |
| 18.      | Warrant 67, J. H. Woodward, Inspector, Traveling Expenses, statement attached .....                                  | 40 00  |
| 30.      | Warrant 68, J. H. Woodward, Inspector, Salary, November.....   | 100 00 |

|  |                   |                   |
|--|-------------------|-------------------|
| 30. Warrant 69, Miss Clara Yarborough, Stenographer, Salary, November.....                                 | 60 00             |                   |
| Dec. 1. Warrant 70, The State Co., Printing 2,500 Seed License Application Blanks, statement attached..... | 10 50             |                   |
| 2. Warrant 71, S. A. L. Ry., 1,000 mileage for J. H. Woodward, Inspector.....                              | 20 00             |                   |
| 9. Warrant 72, J. H. Woodward, Inspector, Traveling Expenses, statement attached.....                      | 40 00             |                   |
| 21. Warrant 73, Miss Clara Yarborough, Stenographer, Salary, December.....                                 | 60 00             |                   |
| Balance on Deposit with State Treasurer..  | 18 40             |                   |
|  | <u>\$3,180 50</u> | <u>\$3,180 50</u> |

## APPENDIX VI.

### DETAILED STATEMENT OF DISBURSEMENTS SHOWING WARRANTS ISSUED ON FUND APPROPRIATED "FOR CARE AND MAINTENANCE OF STATE EXHIBIT," 1916.

|          |  |                 |                 |
|----------|--|-----------------|-----------------|
| 1916.    | Amount of Appropriation.....   | \$500 00        |                 |
| Mar. 1.  | Warrant 1, Jas. D. Lee, Supt. State Exhibit, Expenses of Nathan Burkett, Carpenter, statement attached.....                            | \$17 00         |                 |
| 17.      | Warrant 2, David G. Ellison, Premiums on Insurance Policies Nos. 7239 and 5030, \$2,000 each on State Exhibit, statement attached..... | 150 00          |                 |
| July 10. | Warrant 3, Columbia Lumber & Mfg. Co., Supplies for State Exhibit, statement attached.....   | 43 12           |                 |
| 10.      | Warrant 4, C. O. Brown & Bro., Eight Large Glass for Exhibit, statement attached.....  | 4 60            |                 |
| Sept. 2. | Warrant 5, Nathan Burkett, Carpenter, Expenses for Exhibit, statement attached.....  | 63 25           |                 |
| Oct. 9.  | Warrant 6, Jas. D. Lee, Expenses on Account of Exhibit, statement attached....   | 6 20            |                 |
| 12.      | Warrant 7, Jas. D. Lee, Expenses on Account of Exhibit, statement attached....   | 25 00           |                 |
| 13.      | Warrant 8, Jas. D. Lee, Laborers at Exhibit, statement attached.....   | 18 30           |                 |
| 21.      | Warrant 9, Jas. D. Lee, Laborers, at Exhibit, statement attached.....  | 49 02           |                 |
| 27.      | Warrant 10, Jas. D. Lee, Laborers at Exhibit, statement attached.....  | 20 78           |                 |
| 27.      | Warrant 11, A. H. Moore, Services as Watchman at Exhibit, statement attached.....  | 38 25           |                 |
| Nov. 9.  | Warrant 12, Jas. D. Lee, Services of Laborers at Exhibit, statement attached.....  | 7 72            |                 |
| 15.      | Warrant 13, W. C. Roberts, Services, Painting Signs for Exhibit, statement attached.....   | 14 50           |                 |
| Dec. 22. | Warrant 14, Jones Transfer Co., Services, Moving Exhibit, statement attached.....  | 3 00            |                 |
| 22.      | Warrant 15, Lorick & Lowrance, Supplies for Exhibit, statement attached.....   | 3 65            |                 |
| 22.      | Warrant 16, Blanchard's Art Studio, Making Pictures of Exhibit, Statement Attached.....  | 25 50           |                 |
| 22.      | Warrant 17, G. M. Spigner, Services at State Exhibit, statement attached.....  | 3 15            |                 |
| 29.      | Warrant 18, Jas. D. Lee, Expenses, Account State Exhibit, statement attached.....  | 6 36            |                 |
|          | Total .....  | <u>\$500 00</u> | <u>\$500 00</u> |



## APPENDIX VII.

## DETAILED STATEMENT OF "ACCOUNT SPECIAL (\$1,000) FOR FACTORY INSPECTORS' TRAVELING EXPENSES."

(Paid from Funds from Feed and Oil Accounts as per Provisions of Appropriation Act of 1916, and also included in Statements of those Accounts).

1916.

|       |     |  |         |
|-------|-----|--|---------|
| Feb.  | 25. | Warrant 1, W. S. Bonner, Factory Inspector, Traveling Expenses.....                          | \$40 00 |
|       | 25. | Warrant 2, C. M. Scott, U. T. A., 1,000 mileage for W. S. Bonner, Factory Inspector .....    | 20 00   |
|       | 25. | Warrant 3, S. C. Groeschel, Factory Inspector, Traveling Expenses.....                       | 40 00   |
|       | 25. | Warrant 4, C. M. Scott, U. T. A., 1,000 mileage for S. C. Groeschel, Factory Inspector ..... | 20 00   |
| Mar.  | 7.  | Warrant 5, S. C. Groeschel, Factory Inspector, Traveling Expenses.....                       | 40 00   |
| Apr.  | 1.  | Warrant 6, Southern Ry. Co., 1,000 mileage for S. C. Groeschel, Factory Inspector..          | 20 00   |
|       | 10. | Warrant 7, Seaboard Air Line Ry., 1,000 mileage for W. S. Bonner, Factory Inspector .....    | 20 00   |
|       | 15. | Warrant 8, S. C. Groeschel, Factory Inspector, Traveling Expenses.....                       | 40 00   |
|       | 20. | Warrant 9, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....     | 40 00   |
|       | 29. | Warrant 10, Southern Ry. Co., 1,000 mileage for S. C. Groeschel, Factory Inspector..         | 20 00   |
| May   | 4.  | Warrant 11, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
|       | 13. | Warrant 12, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached ..... | 40 00   |
|       | 15. | Warrant 13, Southern Ry. Co., 1,000 mileage for S. C. Groeschel, Factory Inspector..         | 20 00   |
|       | 17. | Warrant 14, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
| June  | 1.  | Warrant 15, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
|       | 14. | Warrant 16, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
|       | 16. | Warrant 17, C. M. Scott, U. T. A., 1,000 mileage for W. S. Bonner, Factory Inspector .....   | 20 00   |
|       | 26. | Warrant 18, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached ..... | 40 00   |
| July  | 5.  | Warrant 19, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached ..... | 40 00   |
|       | 7.  | Warrant 20, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
|       | 13. | Warrant 21, Southern Ry. Co., 1,000 mileage for S. C. Groeschel, Factory Inspector..         | 20 00   |
|       | 17. | Warrant 22, Seaboard Air Line Ry., 1,000 mileage for W. S. Bonner, Factory Inspector .....   | 20 00   |
|       | 24. | Warrant 23, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
| Aug.  | 5.  | Warrant 24, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....    | 40 00   |
|       | 9.  | Warrant 25, S. A. L. Ry., 1,000 mileage for W. S. Bonner, Factory Inspector.....             | 20 00   |
|       | 12. | Warrant 26, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached ..... | 40 00   |
| Sept. | 9.  | Warrant 27, S. A. L. Ry., 1,000 mileage for S. C. Groeschel, Factory Inspector.....          | 20 00   |
|       | 27. | Warrant 28, Southern Ry. Co., 1,000 mileage for W. S. Bonner, Factory Inspector....          | 20 00   |

|          |   |                   |                   |
|----------|---|-------------------|-------------------|
| Oct. 21. | Warrant 29, S. C. Groeschel, Factory Inspector, Traveling Expenses, statement attached .....  | 40 00             |                   |
| 31.      | Warrant 30, Southern Ry. Co., 1,000 mileage for S. C. Groeschel, Factory Inspector..          | 20 00             |                   |
| Nov. 4.  | Warrant 31, W. S. Bonner, Factory Inspector, Traveling Expenses, statement attached .....     | 40 00             |                   |
| Dec. 27. | Warrant 32, C. M. Scott, U. T. A., 1,000 mileage for S. C. Groeschel, Factory Inspector ..... | 20 00             |                   |
|          |   | <u>\$1,000 00</u> | <u>\$1,000 00</u> |

## APPENDIX VIII.

### DETAILED STATEMENT OF "ACCOUNT SPECIAL (\$2,400) FOR FACTORY INSPECTORS' SALARIES."

(Paid from Funds from Feed and Oil Accounts as per Provisions of Appropriation Act of 1916, and also included in Statement of those Accounts).

1916.

|           |   |                   |                   |
|-----------|---|-------------------|-------------------|
| Feb. 25.  | Warrant 1, W. S. Bonner, Factory Inspector, Salary, January.....              | \$100 00          |                   |
| 25.       | Warrant 2, S. C. Groeschel, Factory Inspector, Salary, January.....           | 100 00            |                   |
| Mar. 1.   | Warrant 3, W. S. Bonner, Factory Inspector, Salary, February.....             | 100 00            |                   |
| 1.        | Warrant 4, S. C. Groeschel, Factory Inspector, Salary, February.....          | 100 00            |                   |
| 31.       | Warrant 5, S. C. Groeschel, Factory Inspector, Salary, March.....             | 100 00            |                   |
| 31.       | Warrant 6, W. S. Bonner, Factory Inspector, Salary, March.....                | 100 00            |                   |
| Apr. 26.  | Warrant 7, W. S. Bonner, Factory Inspector, Salary, April (dated 4-30-16)..   | 100 00            |                   |
| 30.       | Warrant 8, S. C. Groeschel, Factory Inspector, Salary, April.....             | 100 00            |                   |
| May 22.   | Warrant 9, W. S. Bonner, Inspector, Factory, Salary, May (dated 5-31-16)..... | 100 00            |                   |
| 31.       | Warrant 10, S. C. Groeschel, Factory Inspector, Salary, May.....              | 100 00            |                   |
| June 25.  | Warrant 11, W. S. Bonner, Factory Inspector, Salary, June.....                | 100 00            |                   |
| 30.       | Warrant 12, S. C. Groeschel, Factory Inspector, Salary, June.....             | 100 00            |                   |
| July 29.  | Warrant 13, W. S. Bonner, Factory Inspector, Salary, July.....                | 100 00            |                   |
| 31.       | Warrant 14, S. C. Groeschel, Factory Inspector, Salary, July.....             | 100 00            |                   |
| Aug. 23.  | Warrant 15, W. S. Bonner, Factory Inspector, Salary, August.....              | 100 00            |                   |
| 31.       | Warrant 16, S. C. Groeschel, Factory Inspector, Salary, August.....           | 100 00            |                   |
| Sept. 14. | Warrant 17, W. S. Bonner, Factory Inspector, Salary, September.....           | 100 00            |                   |
| 30.       | Warrant 18, S. C. Groeschel, Factory Inspector, Salary, September.....        | 100 00            |                   |
| Oct. 20.  | Warrant 19, W. S. Bonner, Factory Inspector, Salary, October.....             | 100 00            |                   |
| 31.       | Warrant 20, S. C. Groeschel, Factory Inspector, Salary, October.....          | 100 00            |                   |
| Nov. 27.  | Warrant 21, W. S. Bonner, Factory Inspector, Salary, November.....            | 100 00            |                   |
| 30.       | Warrant 22, S. C. Groeschel, Factory Inspector, Salary, November.....         | 100 00            |                   |
| Dec. 31.  | Warrant 23, W. S. Bonner, Factory Inspector, Salary, December.....            | 100 00            |                   |
| 31.       | Warrant 24, S. C. Groeschel, Factory Inspector, Salary, December.....         | 100 00            |                   |
|           |   | <u>\$2,400 00</u> | <u>\$2,400 00</u> |

**APPENDIX IX.****DETAILED STATEMENT OF "ACCOUNT SPECIAL (\$720.00) SALARY OF STENOGRAPHER."**

(Paid from Funds from Feed and Oil Accounts as per Provisions of Appropriation Act of 1916, and also included in Statement of that Account).

|           |  |                        |
|-----------|--|------------------------|
| 1916.     |  |                        |
| Feb. 25.  | Warrant 1, Miss Clara Yarborough, Stenographer, Salary, January.....   | 60 00                  |
| Mar. 1.   | Warrant 2, Miss Clara Yarborough, Stenographer, Salary, February.....  | 60 00                  |
| 31.       | Warrant 3, Miss Clara Yarborough, Stenographer, Salary, March.....     | 60 00                  |
| Apr. 30.  | Warrant 4, Miss Clara Yarborough, Stenographer, Salary, April.....     | 60 00                  |
| May 31.   | Warrant 5, Miss Clara Yarborough, Stenographer, Salary, May.....       | 60 00                  |
| June 30.  | Warrant 6, Miss Clara Yarborough, Stenographer, Salary, June.....      | 60 00                  |
| July 19.  | Warrant 7, Miss Clara Yarborough, Stenographer, Salary, July.....      | 60 00                  |
| Aug. 31.  | Warrant 8, Miss Clara Yarborough, Stenographer, Salary, August.....    | 60 00                  |
| Sept. 30. | Warrant 9, Miss Clara Yarborough, Stenographer, Salary, September..... | 60 00                  |
| Oct. 31.  | Warrant 10, Miss Clara Yarborough, Stenographer, Salary, October.....  | 60 00                  |
| Nov. 30.  | Warrant 11, Miss Clara Yarborough, Stenographer, Salary, November..... | 60 00                  |
| Dec. 30.  | Warrant 12, Miss Clara Yarborough, Stenographer, Salary, December..... | 60 00                  |
|           |  | <hr/>                  |
|           |  | \$720 00      \$720 00 |

**APPENDIX X.****DETAILED STATEMENT OF FUNDS DERIVED FROM TAX ON CONDITIONAL FEED STUFFS, 1916.**

|       |  |                                    |
|-------|--|------------------------------------|
| 1916. |  |                                    |
| Feb.  | 1. Receipts for January deposited with State Treasurer .....   | \$350 00                           |
| Mar.  | 1. Receipts for February deposited with State Treasurer .....  | 250 00                             |
| May   | 1. Receipts for April deposited with State Treasurer .....     | 50 00                              |
| July  | 1. Receipts for June deposited with State Treasurer .....      | 20 00                              |
| Oct.  | 1. Receipts for September deposited with State Treasurer ..... | 30 00                              |
| Nov.  | 1. Receipts for October deposited with State Treasurer .....   | 110 00                             |
| Dec.  | 1. Receipts for November deposited with State Treasurer .....  | 60 00                              |
|       |  | <hr/>                              |
|       | Amount on deposit with State Treasurer..                       | \$870 00      \$870 00<br>\$870 00 |

**APPENDIX XI.****DETAILED STATEMENT OF FUNDS DERIVED FROM SALE OF NITRO-CULTURE AND PAID TO EDMUND A. FELDER, MANAGER SOUTHERN DEPARTMENT OF THE EARP-THOMAS FARMOGERM COMPANY.**

|       |  |            |
|-------|--|------------|
| 1916. |  |            |
|       | Receipts from January 1 to December 31, 1916 .....           | \$2,729 20 |
| Feb.  | 1. Check No. 67, for Receipts Nos. 1 to 7, Inclusive .....   | \$12 40    |
| Mar.  | 1. Check No. 71, for Receipts Nos. 8 to 16, Inclusive .....  | 18 00      |
| Apr.  | 1. Check No. 76, for Receipts Nos. 17 to 33, Inclusive ..... | 18 00      |

|  |                   |                   |
|--|-------------------|-------------------|
| Apr. 30. Check No. 87, for Receipts Nos. 34 to 80, Inclusive     | 85 20             |                   |
| May 31. Check No. 97, for Receipts Nos. 81 to 199, Inclusive     | 418 40            |                   |
| June 30. Check No. 105, for Receipts Nos. 200 to 437, Inclusive  | 882 80            |                   |
| July 31. Check No. 111, for Receipts Nos. 438 to 472             | 180 40            |                   |
| Aug. 31. Check No. 117, for Receipts Nos. 473 to 504, Inclusive  | 60 80             |                   |
| Sept. 30. Check No. 124, for Receipts Nos. 505 to 663, Inclusive | 449 20            |                   |
| Oct. 31. Check No. 131, for Receipts Nos. 684 to 970, Inclusive  | 486 40            |                   |
| Nov. 30. Check No. 140, for Receipts Nos. 971 to 1043, Inclusive | 132 80            |                   |
| Dec. 31. Check No. 146, for Receipts Nos. 1044 to 1060           | 34 80             |                   |
|  | <b>\$2,729 20</b> | <b>\$2,729 20</b> |

## APPENDIX XII.

### DETAILED STATEMENT OF FUNDS DERIVED FROM SALE OF PHOS- PHO-MARL AND TRANSMITTED TO CONTRACTORS, AS PER PROVISIONS OF APPROPRIATION ACT OF 1916.

| 1916.                                    | Receipts     | Tons.              |  |
|--|--------------|--------------------|--|
| Mar. Receipts Nos. 1 to 35, inclusive    | 1,298        | \$2,706 50         |  |
| Apr. Receipts Nos. 36 to 54, inclusive   | 598          | 1,285 70           |  |
| May Receipts Nos. 55 to 60, inclusive    | 194          | 440 80             |  |
| June Receipts Nos. 61 to 63, inclusive   | 90           | 171 00             |  |
| July Receipt No. 64                      | 30           | 70 50              |  |
| Aug. Receipts Nos. 65 to 74, inclusive   | 380          | 926 50             |  |
| Sept. Receipts Nos. 75 to 111, inclusive | 1,220        | 3,126 00           |  |
| Oct. Receipts Nos. 112 to 152, inclusive | 1,233        | 2,920 60           |  |
| Nov. Receipts Nos. 153 to 168, inclusive | 486          | 1,044 15           |  |
| Dec. Receipts Nos. 169 to 188, inclusive | 792          | 1,754 70           |  |
|  | <b>6,321</b> | <b>\$14,446 45</b> |  |

#### Disbursements.

|  |            |
|--|------------|
| Apr. 1. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for March, Orders Nos. 1-35, inclusive    | \$2,576 70 |
| 1. E. A. Felder, Commission on 1,298 Tons Marl during March at 10c Less March Expenses (Printing and Stationery)       | 94 30      |
| 1. The State Co., Printing and Stationery for Marl Transaction   | 35 50      |
| May 2. Sale of Marl for April, Orders Nos. 36-54, inclusive  | 1,225 90   |
| 2. E. A. Felder, Commission on 598 Tons Marl during April  | 59 80      |
| June 1. E. A. Felder, Commission on 194 Tons Marl for May  | 19 40      |
| 1. Manufacturers Record, Baltimore, Md., Printing 3,000 Marl Circulars, Reprint from Manufacturers Record and Express  | 31 65      |
| 1. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for May, Orders Nos. 55-60, inclusive          | 389 75     |
| July 5. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for June, Orders Nos. 61-63, inclusive    | 162 00     |
| 5. E. A. Felder, Commission on 90 Tons Marl During June  | 9 00       |
| Aug. 3. E. A. Felder, Commission on 30 Tons Marl During July   | 3 00       |
| 3. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for July, Order No. 64                         | 67 50      |
| Sept. 1. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for August, Orders Nos. 65-74, inclusive | 888 50     |
| 1. E. A. Felder, Commission on 380 Tons Marl for August  | 38 00      |
| Oct. 1. E. A. Felder, Commission on 1,220 Tons Marl for September  | 122 00     |

|      |  |             |             |
|------|--|-------------|-------------|
|      | 1. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale of Marl for September, Orders Nos. 75-111, inclusive.... | 3,004 00    |             |
| Nov. | 1. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale Marl for October, Orders Nos. 112-152, inclusive.....    | 2,797 30    |             |
|      | 1. E. A. Felder, Commission on 1,233 Tons Marl for October.....  | 123 30      |             |
| Dec. | 6. E. A. Felder, Commission on 489 Tons Marl for November.....   | 48 60       |             |
|      | 6. Charleston, S. C., Mining & Mfg. Co., Net Proceeds From Sale Marl for November, Orders Nos. 153-168, inclusive.....   | 995 55      |             |
|      | 30. Charleston, S. C. Mining & Mfg. Co., Net Proceeds From Sale Marl for December, Orders Nos. 169-188, inclusive.....   | 1,675 50    |             |
|      | 30. E. A. Felder, Commission on 792 Tons Marl for December.....  | 79 20       |             |
|      |  | <hr/>       |             |
|      | Total Paid Charleston, S. C. Mining & Mfg. Co., 6,321 Tons.....  | \$14,446 45 | \$14,446 45 |
|      | Total Paid E. A. Felder, Commission of 10c on 6,321 Tons (Less Expense of Printing and Stationery, \$35.50).....         | 13,782 70   |             |
|      |  | 596 60      |             |
|      | Total Paid Printing and Stationery.....  | 67 15       |             |
|      |  | <hr/>       |             |
|      |  | \$14,446 45 | \$14,446 45 |

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